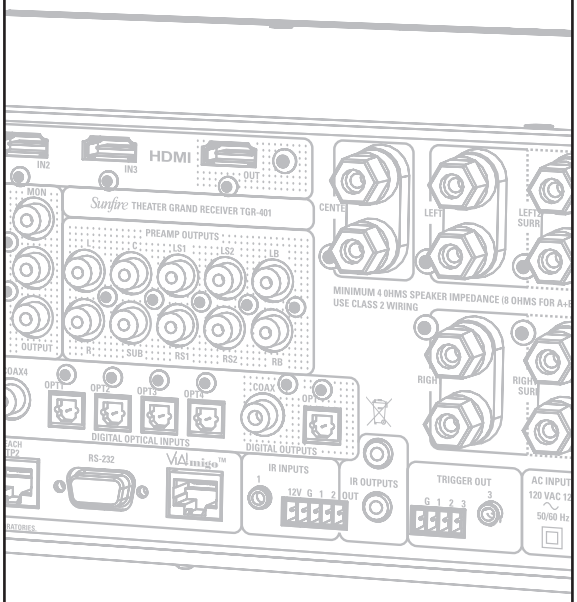
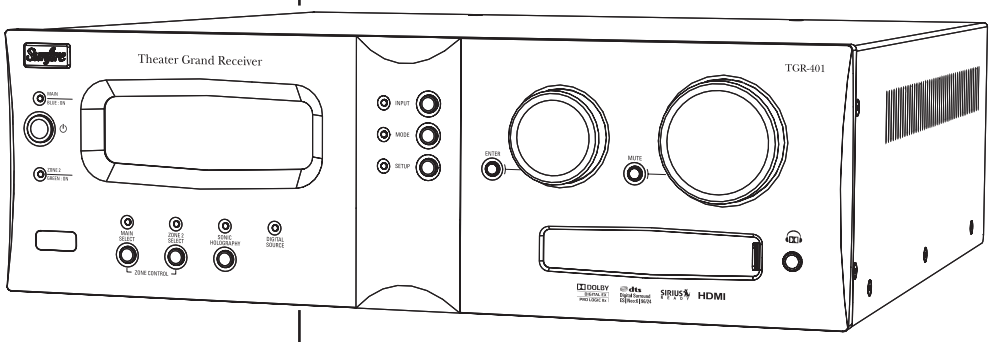
Sunfire®



Theater Grand Receiver
TGR-401
TGR-401-230



User's Manual

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safety Instructions

1. Read Instructions

2. Keep these Instructions

3. Heed all Warnings.

4. Follow all Instructions

5. Do not use this apparatus near water.

6. Clean only with a dry cloth.

7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

8. Unplug this apparatus during lightning storms or when unused for long periods of time.

9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

10. Ventilation — The apparatus should be situated so that its location or position does not interfere with its proper ventilation. For example, the apparatus should not be situated on a bed, sofa, rug, or similar surface that may block any ventilation openings; or placed in a built-in installation such as a bookcase, cabinet, or closed equipment rack that may impede the flow of air through ventilation openings.

11. Power Sources — The apparatus should be connected to a power supply only of the type described in these operation instructions or as marked on the apparatus.

12. Power Cord Protection — Power-supply cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit the apparatus.

13. Non-use Periods—The power cord of the apparatus should be unplugged from the outlet when unused for a long period of time.

14. Object and Liquid Entry — Care should be taken so that objects do not fall into and liquids are not spilled into the inside of the apparatus.

15. Servicing — The user should not attempt to service the apparatus beyond those means described in this operating manual. All other servicing should be referred to qualified service personnel.

PORTABLE CART WARNING

Carts and stands - The Component should be used only with a cart or stand that is recommended by the manufacturer.
A Component and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the Component and cart combination to overturn.

16. To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.
Pour préevenir les chocs électriques ne pas utiliser cette fiche polariseé avec un prolongateur, un prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans laisser aucune parlVe à découvert.

17. Grounding or Polarization — Precautions should be taken so that the grounding or polarization means of the Component is not defeated.

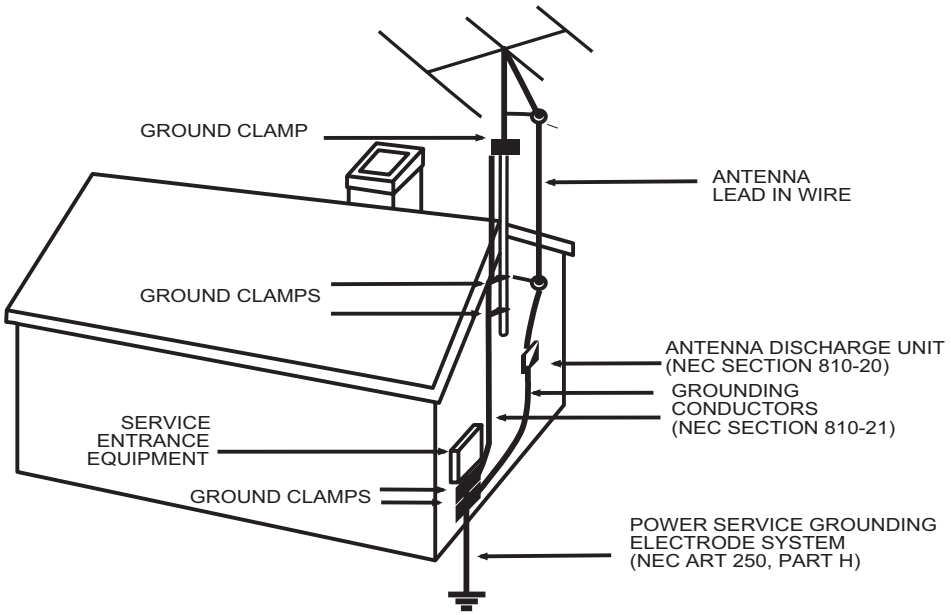
This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION — Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant las limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

WARNING – TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.
ATTENTION: POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810–"RADIO AND TELEVISION EQUIPMENT"


GROUND CLAMP
ANTENNA LEAD IN WIRE
GROUND CLAMPS
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUNDING CONDUCTORS (NEC SECTION 810-21)
SERVICE ENTRANCE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC NATIONAL ELECTRICAL CODE.

NOTE TO CATV INSTALLER
This reminder is to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.
OUTSIDE ANTENNA GROUNDING
If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the lead-in wire to an antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure above.

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Read the **Safety Instructions** carefully before connecting and using your Sunfire Theater Grand Receiver TGR-401.

Chapter 1 is a general introduction to the features, details and installation of your TGR-401.

Chapter 2 shows many options for connecting your source equipment to the TGR-401.

Chapter 3 describes the details and operation of the advanced remote control.

Chapter 4 shows the various menus of the On Screen Display, and how to adjust and customize your TGR-401.

Chapter 5 describes the available modes, options and operational details of the TGR-401.

The Appendix shows some additional information, including a troubleshooting guide, optional components, the warranty and service assistance details

To find out more about this and other Sunfire products, please visit our website: **www.sunfire.com**

Introduction

Thank you for purchasing a Sunfire TGR-401 Theater Grand Receiver. We hope that you enjoy it and the music it makes as much as we have enjoyed creating it for you.

As with our entire line of products, the TGR-401 is brimming with exclusive, high-performance technologies that deliver powerful movie and music experiences. These include the following features:

Amplifier:

- Patented Tracking Downconverter™ power supply
- 7 x 200W into 8 ohms, with no more than 0.5% THD

Features:

- SIRIUS®-ready
- AM/FM tuners with RDS feedback
- VIA!migo™ support for native iPod® control via OSD and front panel
- Two touchpad ports for optional Olé-2SF Film Interactive touchpads. Feedback for functions and metadata from SIRIUS and iPod
- Automatic setup and room correction w/ included microphone
- Input volume matching
- A/V sync to match audio to video

Connections:

- 4 Analog inputs, 2 outputs
- 4 Video inputs, 2 outputs
- 4 optical digital inputs, 1 output
- 4 coaxial digital inputs, 1 output
- 7.1 multi-channel input
- 7.1 preamp outputs (RCA)
- Assignable, HD-ready front panel input
- CEA color standard, gold-plated binding posts

Processing:

- Sonic Holography for enhanced imaging
- Dolby Digital EX and ProLogic IIx
- Dolby Headphone
- DTS-ES, Neo:6, and DTS-96/24
- SourceDirect mode for DSP bypass

Video:

- Sunfire-designed, 1080p HDMI v1.3a switching (3 in / 1 out)
- 100 MHz component switching (3 in / 1 out)
- Video upconversion to component

Integration features

- Bi-directional RS-232 input
- 2 IR inputs, 3 outputs
- 3 Assignable 12V trigger outputs
- On-the-fly powered Zone 2 speaker switching
- Maximum and power-on volume settings for Main and Zone 2
- Power-on source setting for Main and Zone 2
- PC application for initial setup, Olé-2SF touchpad programming, and software upgrades
- LR2/Surr2 configurable binding posts

Miscellaneous:

- Long-grain, solid aluminum front panel
- Elegant blue LEDs for visual feedback
- Removable IEC cord

Remote control features

- Fully backlit
- Pre-programmed for most brands of A/V equipment
- Learns commands from your other remote controls
- Macro feature lets you program a sequence of control steps
- Operates up to 19 components
- Does not lose programming memory when changing batteries
- RF capable with optional MRF-260 RF base

Optional accessories

See your Sunfire dealer or visit our web site for more information regarding the following accessories:

- SRK-200 Rack mount kit
- Olé-2SF touchpads
- VIA!migo iPod dock
- SC-H1P1 SIRIUS Satellite Radio antenna/tuner kit
- MRF-260 RF remote control base

Unpacking

Your TGR-401 should reach you in perfect condition. If you do notice any shipping damage, please contact your Sunfire Dealer immediately.

Gently lift out the unit and remove all the packing material and accessories. It is important to save all the packing materials and the box in case your TGR-401 ever needs to be moved or shipped for repair.

Make sure that you keep your sales receipt. It is the only way to establish the duration of your Limited Warranty and it may come in useful for insurance purposes.

Please take a moment to fill out and mail the Sunfire Customer Response card. Also read the serial number located on the rear panel, and record it here:

Serial #:

_____

Purchased at:

_____

_____

_____

_____

Date: _____

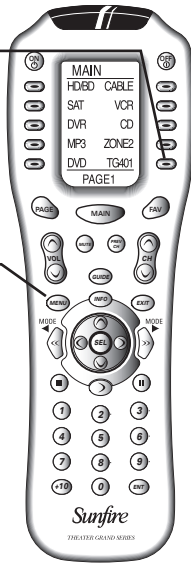
Overview

Most features of the TGR-401 can be operated by the remote control's TG401 section.

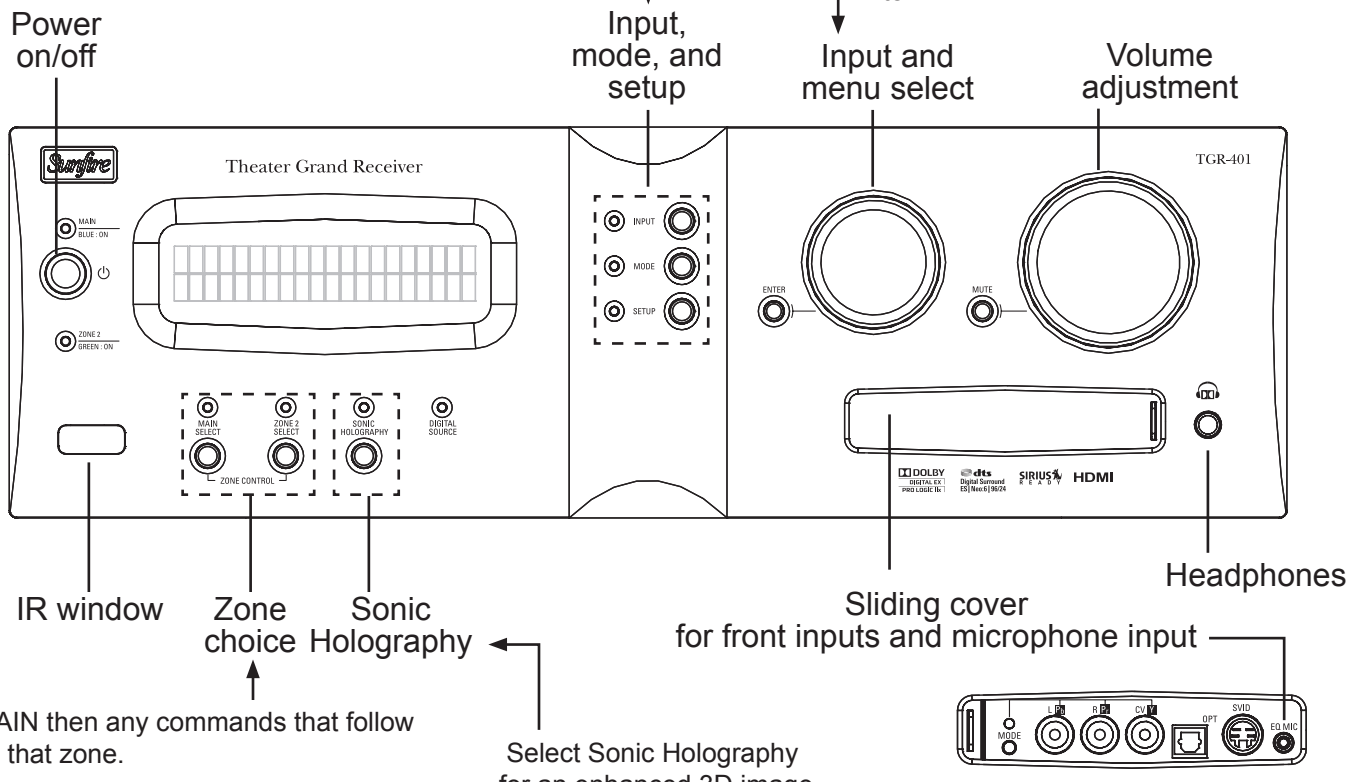
For the best Home Theater performance, you should calibrate your speakers and customize the TGR-401 settings for your system. Press the MENU button on the remote control to activate the On Screen Display (OSD). This has several menus which will allow you to set up your speakers and calibrate your system correctly.

The remote can also be used to activate and control all features of the second zone.

The TGR-401-230 is the export model, set for 220-240 VAC operation. Its operation is identical to the TGR-401 described in this manual.



Use the center three buttons to select either the input, mode, or setup menus. Then use the input and menu selection knob to find the item. In the setup menu, rotate the knob to move through various menu items and press the nearby enter button to select an item.



Select MAIN then any commands that follow will affect that zone.

Select Zone 2, then any commands that follow within several seconds will affect Zone 2. It returns to Main Zone control after several seconds of inactivity.

Select Sonic Holography for an enhanced 3D image of any source.

Quick Start Guide

We hope that the following details will help you get started using your TGR-401.

1. Take care to read and follow the safety instructions on pages 2-3. Also make sure that you read the notes and details throughout the manual, especially notes marked with a warning triangle (⚠).

2. Add four new AAA batteries to the remote control.

3. Connect your source equipment and speakers to the TGR-401.

⚠ Make sure that all of your equipment remains unplugged from the AC mains until you have made all the connections.

4. In your DVD player's Audio setup menu, set the digital output to **BITSTREAM**. If this is not set correctly, the TGR-401 cannot decode the digital information for 5.1 surround sound playback.

5. The TGR-401's bass management system allows the bass from each speaker to be redirected to a subwoofer. Larger speakers can play the full frequency range, and smaller speakers such as satellite types can have their bass redirected. See page 38 for details.

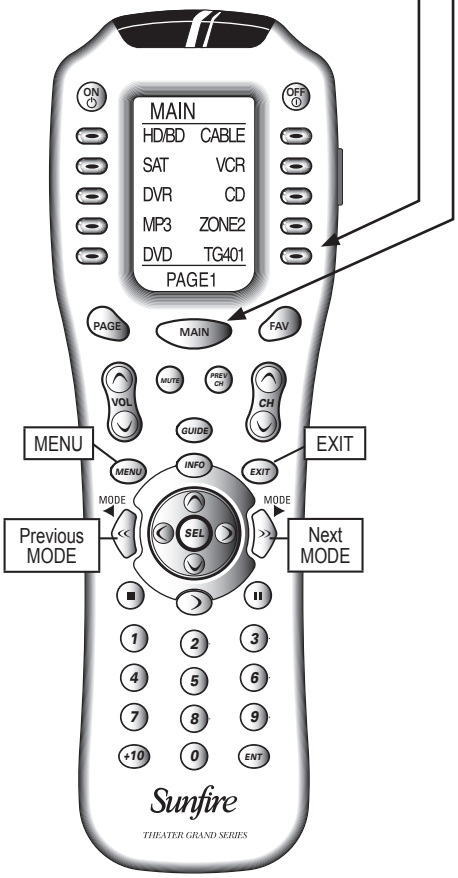
   Make a note of which speakers you would like to play the full frequency range (Large) and those which will have their bass redirected. Also make a note of the approximate distance of each speaker from your listening position.

6. The surround back speaker outputs can be used for powering surround back, or Zone 2 speakers. See page 22

7. Turn on the TGR-401, and then turn on your TV and source equipment.

8. Press the remote MAIN button a few times to make sure you are on the Main Page 1 Menu in the remote's display.

9. Set the remote to operate the TGR-401 by pressing the TG401 button.



10. The VOL and MUTE buttons will control the TGR-401 no matter which source component the remote is set to operate. The PUNCH command allows you to change this if required (see page 28).

11. Turn down the TGR-401 volume and use the remote or front panel to select a video source as follows: If you have followed step 9, the remote now shows the inputs that can be selected. Select one. (From the TGR-401 front panel, you can first press the input button (center, top) and then rotate the knob to select the desired input.)

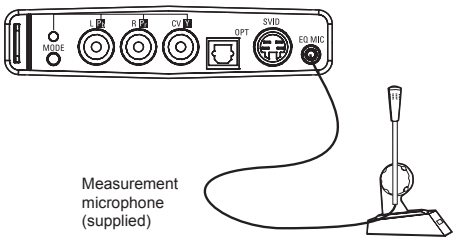
12. Play a source, such as a DVD, and bring up the volume to suit your taste. Make sure the video can be seen in the TV monitor.

13. Stop or pause the source.

The TGR-401 now needs to be set-up correctly to suit your speakers and system. This is done using the TGR-401 on screen display (OSD) menus. It can be done either automatically or manually, as can the EQ adjustment. This needs to be done when you use your system for the first time, or if you change anything such as the speakers or their position.

Automatic Setup

The TGR-401 comes with a measurement microphone that plugs into the front panel microphone input.



The automatic setup procedure uses the microphone to measure and evaluate your system. After the measurements are complete, the levels, crossover frequency, and delay times of the speakers are automatically adjusted for the best performance.

Any problems with the speakers are indicated, for example, it will let you know if there is low output from a speaker, or if the polarity is reversed.

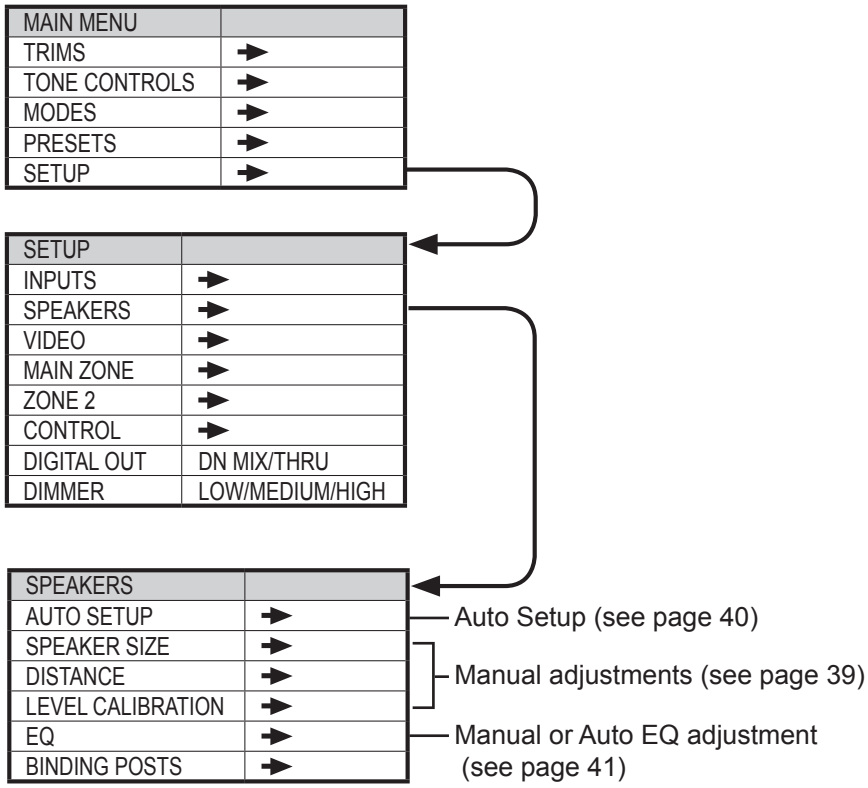
Details of the auto-setup are shown on page 40. Alternatively, you can use the manual procedure to set up your system.

Manual Setup

There are three main manual adjustments that can be made using the SPEAKERS OSD menu:

1. The SPEAKER SIZE menu allows you to enter the crossover frequency of each speaker. Using bass management, any bass below the crossover frequency will be redirected to your subwoofer.
2. The LEVEL CALIBRATION menu allows you to adjust the level of each speaker until they are all playing at the same level. (The level calibration test tones are also a quick way to check that all your speakers are working.)
3. The SPEAKER DISTANCE menu allows you to enter the distance that each speaker is away from your listening position. The TGR-401 then calculates the delay times.

Details of the manual setup procedure are shown on page 39.



EQ Adjustment

The measurement microphone can also be used to measure the system response and adjust the EQ automatically. This will provide a smooth response and remove room effects.

Alternatively, the EQ of pairs of speakers, or all speakers can be adjusted manually to suit your taste.

Details of the auto-EQ and manual EQ adjustment are shown on page 41.

OSD Menus

The SPEAKERS menu is used to run the auto-setup, manual setup, and EQ adjustment.

1. Press the MENU button on the remote to bring up the MAIN MENU of the OSD on your TV.
2. Use the navigation pad left, right, up and down buttons to navigate through the menus in the next steps.

   NOTE: Quit the OSD at any time by pressing the nearby EXIT button. Any changes will be saved. There is no need to navigate back through previous pages, unless you want to make more changes. The TGR-401 front panel display shows the same messages as the OSD.
3. In the MAIN MENU, select SETUP, and from there select the SPEAKERS Menu.
4. In the SPEAKERS menu are the options for AUTO SETUP, SPEAKER SIZE, DISTANCE, LEVEL CALIBRATION, and EQ.
5. When you have finished the setup and/or EQ adjustment, press the remote's EXIT button to quit the OSD.

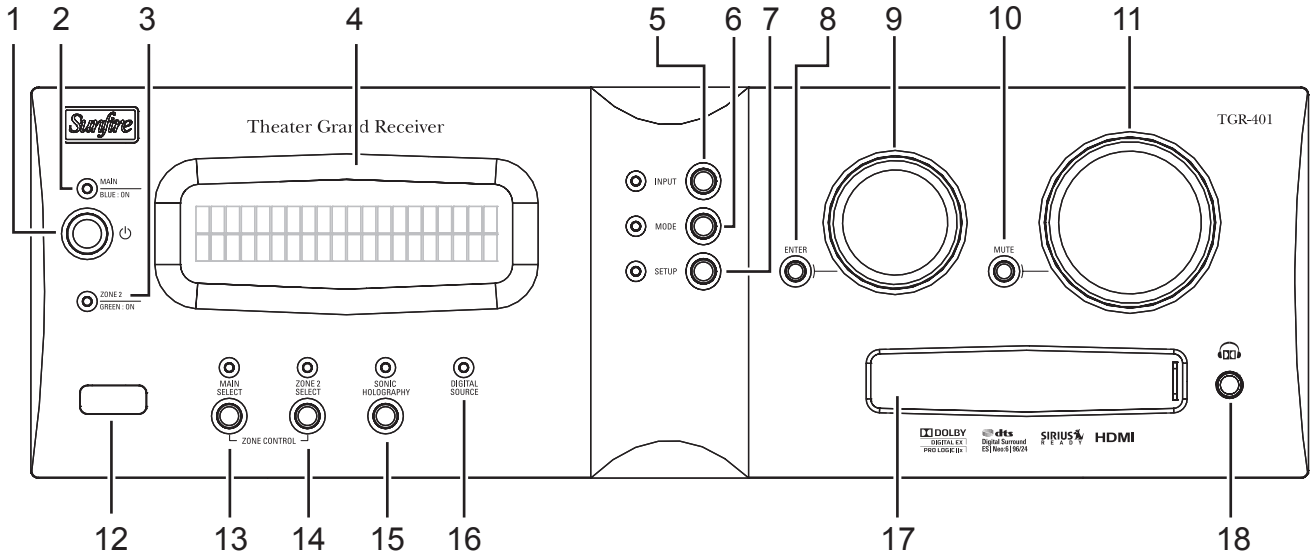
Conclusion

Once the automatic setup or manual setup is finished, and any EQ adjustments made, the TGR-401 is setup correctly and ready for action.

If you play a Dolby Digital or DTS encoded source, the TGR-401 will automatically select the correct surround mode. If it is a 2-channel source, you can select a surround mode using the remote's MODE buttons or from the front panel.

The TGR-401 has many more options that are described in further detail in this manual. These options will help you customize the TGR-401 to suit your tastes. You can do this after you have used the TGR-401 for a while and have a better idea of how you would like to customize your system.

Front Panel Features



1. Power

This button turns the TGR-401 on (fully powered up) or into Standby mode (asleep, but can be turned on remotely).

The blue LED above the power switch is on when the TGR-401 main zone is turned on. When the TGR-401 is turned off, the LED will turn red.

To fully turn off power to the TGR-401, for example if you are going on vacation for a week or two, then use the rear panel power switch.

Press Zone 2 select (14) followed by this power button to turn on Zone 2.

2. Main LED

This blue LED is on when the Main zone is on. It flashes red when the remote control is used.

3. Zone 2 LED

This green LED is on when Zone 2 is on.

4. Display

This display shows which input is selected, the volume level, surround mode, and other features such as the setup menus.

5. Input

Press this button, then cycle through the inputs with the manual selector (9). The LED will light.

6. Mode

Press this, then cycle through the various modes with the manual selector (9). The LED will light.

7. Setup

Press this, then cycle through the available setup items with the manual selector (9). Press enter (8) to select the required setup item. Press Input (5) or Mode (6) to exit the setup menus. The LED will light when in setup mode.

8. Enter

Use this and the manual selector knob (9) during setup (7). When a desired menu item is found, press enter to select that item.

Note: Setup (7) and Enter (8) can be used to increase or decrease dB values within the menus.

9. Manual Selector

Use this to cycle through the various menu items such as the inputs (when input (5) is pressed), the modes (when mode (6) is pressed), and setup (when setup (7) is pressed).

10. Mute

This turns off the sound. Press it again, or adjust the volume control to return to the previous volume level.

11. Volume

Rotate this manual control clockwise to increase the volume. The level will appear in the front panel display. Note that the control knob does not rotate when the remote is used. When turning on a new source, make sure the level is low, such as 20, and increase it slowly.

Note: When the TGR-401 is powered on, the volume is set to what is was when it was turned off. It can also be set to come on at a preset max or min volume (see the Main Zone in the Setup menu).

12. IR Receiver Window

This window should be clean and free from obstruction for the remote control to work correctly.

13. Main Select

Any changes made after pressing this button will affect the main zone.

14. Zone 2 Select

Any changes made after pressing this button will affect Zone 2. If no changes are made for 8 seconds, the unit reverts back to main select. To turn on Zone 2, press this button first, followed by the power button.

15. Sonic Holography

Engage this to add a three dimensional effect, especially to stereo listening.

16. Digital Input

This will light when a digital audio source is playing.

17. Front Door

Sliding this door to the left reveals the front input connections and the connection point for the supplied measurement microphone. This is an ideal place for connecting video game consoles or video cameras.

The three RCA inputs can be:

- Left audio in, right audio in, and composite video in.

  or, if the mode button is pressed, they can be:

- Pb, Pr, and Y component video inputs (the LED will light).

There is also a digital optical input, and an S-Video input.

The measurement microphone connects in the right hand corner during the auto-setup and auto-EQ procedures.

The front input can be selected by the remote control or by the input button (5) and manual selector (9).

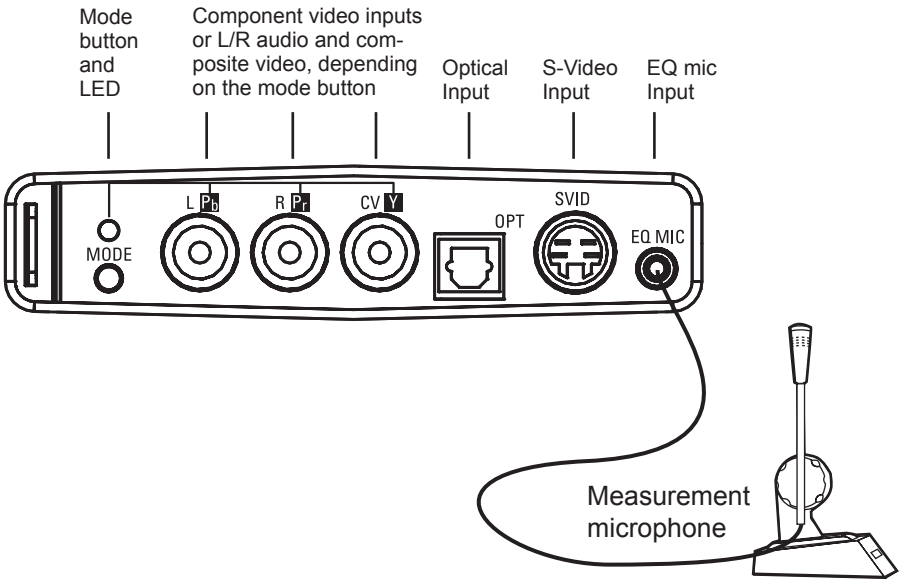
Note: The remote control has a FRTMD button (front mode) in the Main Zone and Zone 2. This works the same as pressing the front door panel Mode button, changing the three front RCA inputs from L/R/composite video, to component video inputs.

18. Headphone output

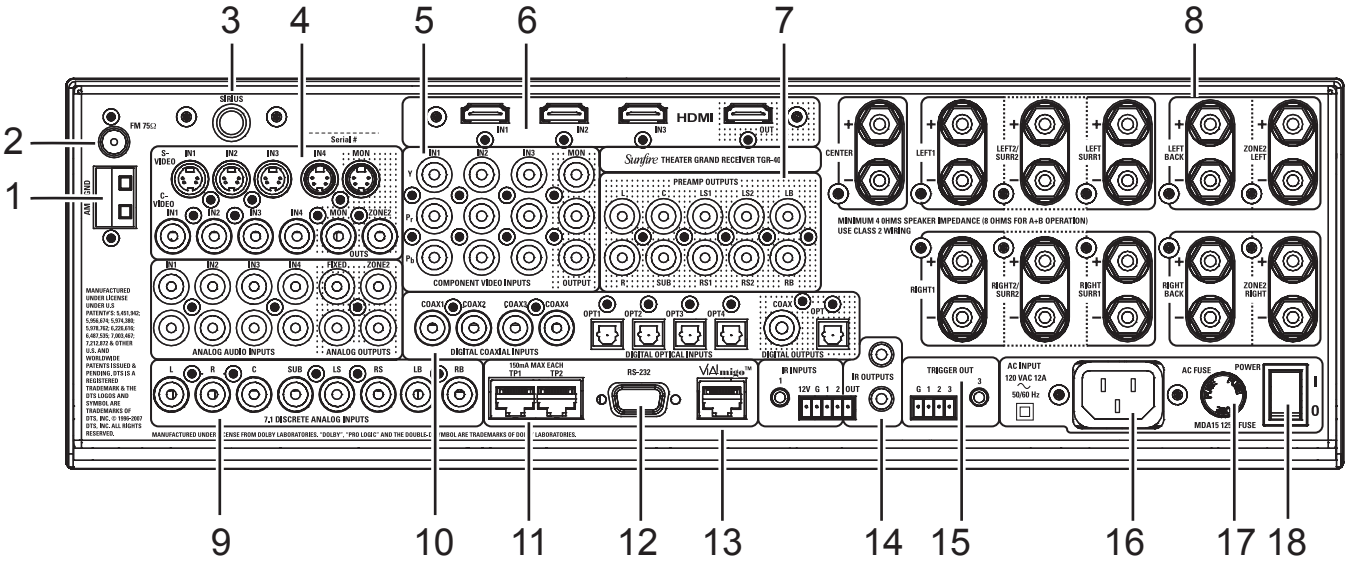
This is where to connect your headphones. In the MODES menu of the on screen display, the headphone output trim can be adjusted relative to the setting of the main volume level (11). Also in the MODES menu and with the remote, you can select Dolby Headphone technology on or off.

Dolby Headphone technology enables you to experience the surround effects of a five-channel, six-channel, or seven-channel soundtrack through standard stereo headphones.

Make sure that the volume level is turned down when connecting headphones, or when playing a new source, or making any changes. This will help protect your hearing from damage.



Rear Panel Features



1. AM Antenna

These connections are for the supplied AM loop antenna.

2. FM Antenna

The supplied FM antenna fits this “F-type” coaxial connector. Other antennas can be fitted for improved reception.

3. SIRIUS Connection

This connection is provided for the optional SIRIUS tuner kit (SC-H1P1). This consists of an antenna for picking up satellite radio transmissions, and a tuner unit that connects here. The connection allows left and right audio and control data to enter the TGR-401. The OSD menus of the TGR-401 allow you to select your favorite SIRIUS Satellite radio stations as presets for easy recall. See page 63 for more details.

4. Audio/Video

These audio, composite-video and S-video inputs connect to the outputs of your audio video components. When these inputs are selected, the audio will be heard in your system, and the video will be seen on the TV screen.

Fixed audio output is available, for example for stereo recording to a tape player, independent of the TGR-401 volume. A stereo audio Zone 2 output is also available.

S-Video and composite video outputs are available for monitoring, as well as a composite video output for Zone 2.

5. Component Video

These inputs connect to the component-video outputs of your video sources if they have this capability. When these inputs are selected, the TGR-401 will automatically route any video signals going into these jacks to the component video outputs. Note that component video provides the best picture compared to composite or S-video.

If your TV Monitor has component video inputs, connect them to the outputs. The TGR-401 can also up-convert composite video and S-video from the other inputs.

6. HDMI

Use these to connect any HDMI components you may have in your system. Three are inputs, and one is an output to your HDMI-equipped TV. This supports 1080p and HDMIv1.3a sources. No on-screen-display or audio decoding inside the TGR-401 is available from the HDMI inputs. Always connect a separate digital audio input cable when using HDMI.

7. Preamp Outputs

These line-level audio outputs allow you to use external amplifiers to power your loudspeakers. There are outputs for L, R, C, LS1, RS1, LS2, RS2, LB, RB, and SUB.

8. Speaker-level Outputs

These speaker-level audio outputs connect to the input posts of your loudspeakers.

9. 8-CH Inputs

These analog audio inputs can connect to the output of an external surround processor, or a source component such as DVD-Audio, SACD, or a DVD player

with its own surround decoder. You can select this as an input from the front panel or remote control. The eight channels of analog audio will then pass into the TGR-401.

Note: if you use HD-DVD or Blu-ray DVD players that have 7.1 analog audio outputs, use this 8-channel input. It is fully processed in DSP with bass management, speaker delays and tone controls. Only the left/right jacks are available in Zone 2.

10. Digital Connections

There are four S/PDIF digital coaxial inputs, with one coaxial output, and four digital optical inputs with one optical output.

Use these with source equipment that has digital audio connections.

11. TP1 and TP2

Optional Olé-2SF Film Interactive touchpads are available for external control of Zone 2 or the Main Zone.

These wall-mounted touchpads connect to TP1 or TP2 using standard CAT-5 cable.

Please contact your Sunfire dealer for more information. Use only touchpads that are recommended by Sunfire.

Do not connect these ports to Ethernet or other computer networks.

12. RS-232 Port

This communications port allows future updates of the software from Sunfire to be made to your TGR-401. It may also be used for control by 3rd party integration systems.

13. VIA!migo Port

This port allows connection of a proprietary VIA!migo iPod docking station system available from Sunfire.

Do not connect this port to Ethernet or other computer networks.

14. Infrared (IR)

These inputs and outputs are used in custom installations to control the Main Zone and Zone 2 from a remote location. The input and output accept 1/8” mono mini-jacks from standard remote control IR equipment, such as those made by Xantech and other companies. There is also a screw terminal output for bare wire connections. The remote sensors can be in a different room, or your main room.

15. Trigger Outputs

These allow the TGR-401 to control the turn-on of other trigger-enabled equipment in your system.

16. IEC Linecord Socket

The TGR-401 comes with a detachable linecord that connects here.

Plug the linecord into an AC wall socket or power strip that is correctly configured with the voltage specified for your model.

17. AC Line Fuse

Always unplug the linecord from the AC Mains before checking or changing the fuse. If this fuse blows, you must replace it with a fuse of exactly the same size and current rating.

18. Power Switch

If this is switched off, the TGR-401 will be off, and cannot be turned on even with the front panel power switch, the remote control, or optional Olé-2SF touchpads.

In normal operation, leave this switch on. Turn it off if you will not be using the TGR-401 for extended periods.

Installation

Observe the following precautions when choosing a location for your TGR-401:

> Make sure the TGR-401 has good ventilation. Do not cover any of the ventilation slots, or fit the receiver inside a sealed cabinet without good air flow.

- Protect it from prolonged exposure to direct sunlight and other direct sources of heat, such as heating vents and radiators.
- Do not expose the unit to rain or moisture. If fluid or a foreign object should enter the unit, immediately turn off the power and contact your Sunfire Dealer.
- Avoid excessive exposure to extreme cold or dust.
- Do not place heavy objects on top of the unit.

AC Power Considerations

Ensure that the unit is plugged into an outlet capable of supplying the correct voltage specified for your model.

Care

If you need to clean the front surface, first turn off the power and then use a soft dry cloth, rubbing with the grain. Be careful not to scratch the display window.

Connection Tips

Before setting up your new system, please consider the following :

> Always make sure that your components are all turned OFF, or unplugged before making or changing any connections.

- Whenever possible, route the power cords away from the signal cables or speaker wires to prevent any hum or interference heard in the speakers.
- Choose reliable hookup cables. They should be fully shielded and as short as possible.
- Use quality coaxial digital cables to connect the TGR-401 to any source equipment which has coaxial digital outputs.
- Some patch cords can be a very tight fit and there is usually a preferred method of getting them off. Some have to be removed with a twisting action. Be gentle or you may damage the jacks of your TGR-401, or other components.
- Some audiophile cables should be hooked up in one direction, these are usually marked with arrows.
- It is usual for the right channel patch cord plugs to be red and the left channel connections to be white, grey or black. Composite video connections are usually yellow.

Video Connections

The TGR-401 has four types of video connections: composite video, S-video, component video and HDMI. Choose component or S-video if your video system supports it, as this will give better picture quality than composite video.

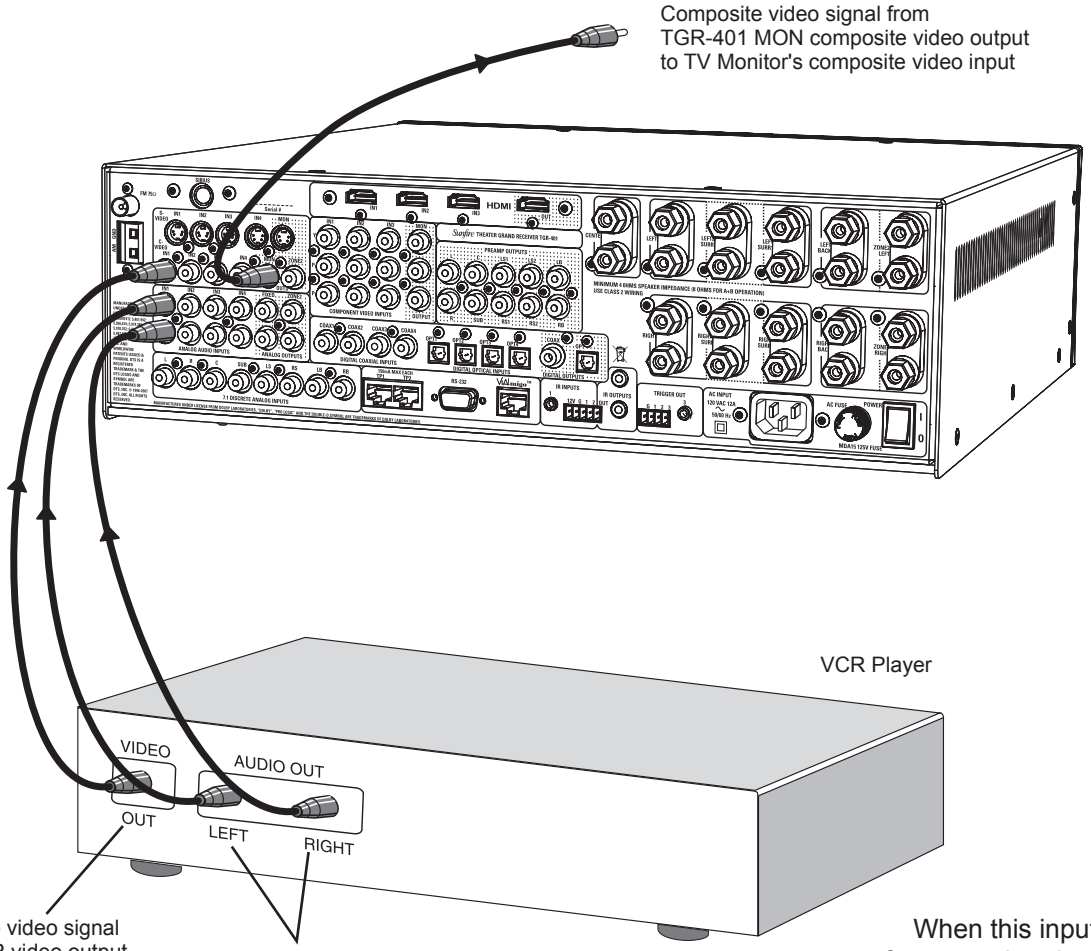
When an audio/video component is selected, the audio will play in your system and the video will be switched to a video input of your TV monitor.

You must have the TV connected in order to see the On Screen Display (OSD). No OSD is available on HDMI.

System Configurations

The following pages show some typical connections that you might make in your installation. They show how the inputs and outputs of the TGR-401 are connected to various audio and video components.

Analog Audio and Composite Video (VCR)

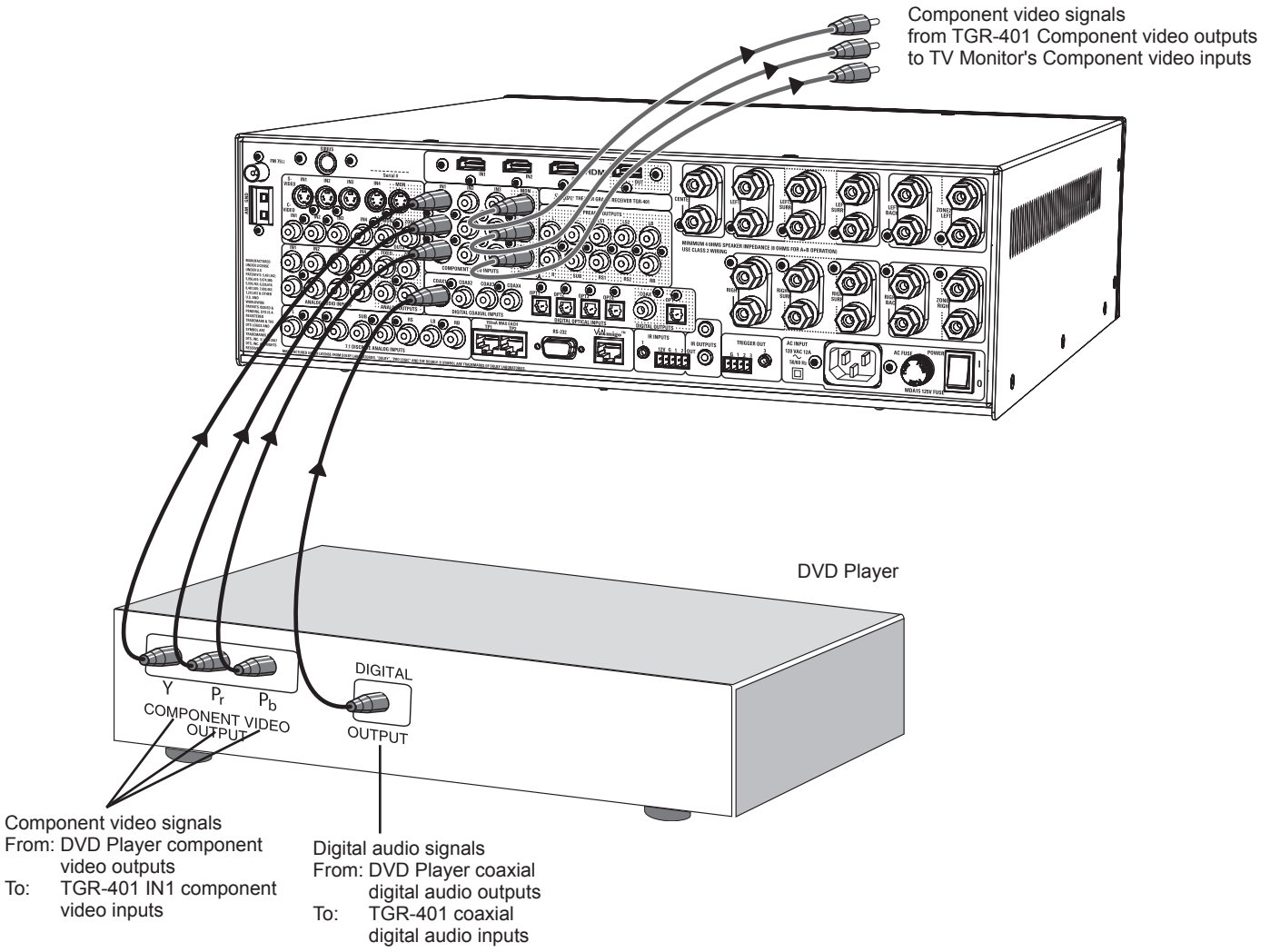


When this input is selected from the front panel or the remote control, the VCR's audio will play in your system and the video is sent to the TV.

As with all the video connections that follow, you must make sure that your TV monitor is set to look at its correct video input or you will not see the picture.

If your TV and other video components have S-Video connections, use them, as they provide better picture quality than composite video.

Digital Audio and Component Video Connections (DVD)



If your DVD and TV Monitor both have component video, they can be connected as shown, giving a superior picture.

The digital output from the DVD player must be connected to the digital inputs of the TGR-401. This is the only way the TGR-401 can receive and decode Dolby Digital or DTS signals. You must use a coaxial or optical digital cable to make the connection to the TGR-401, rather than a standard audio cable.

Note: you must also connect the player's two-channel audio outputs if you want it to play it in Zone 2 when the Main Zone is playing a different source.

CD and Antenna Connections

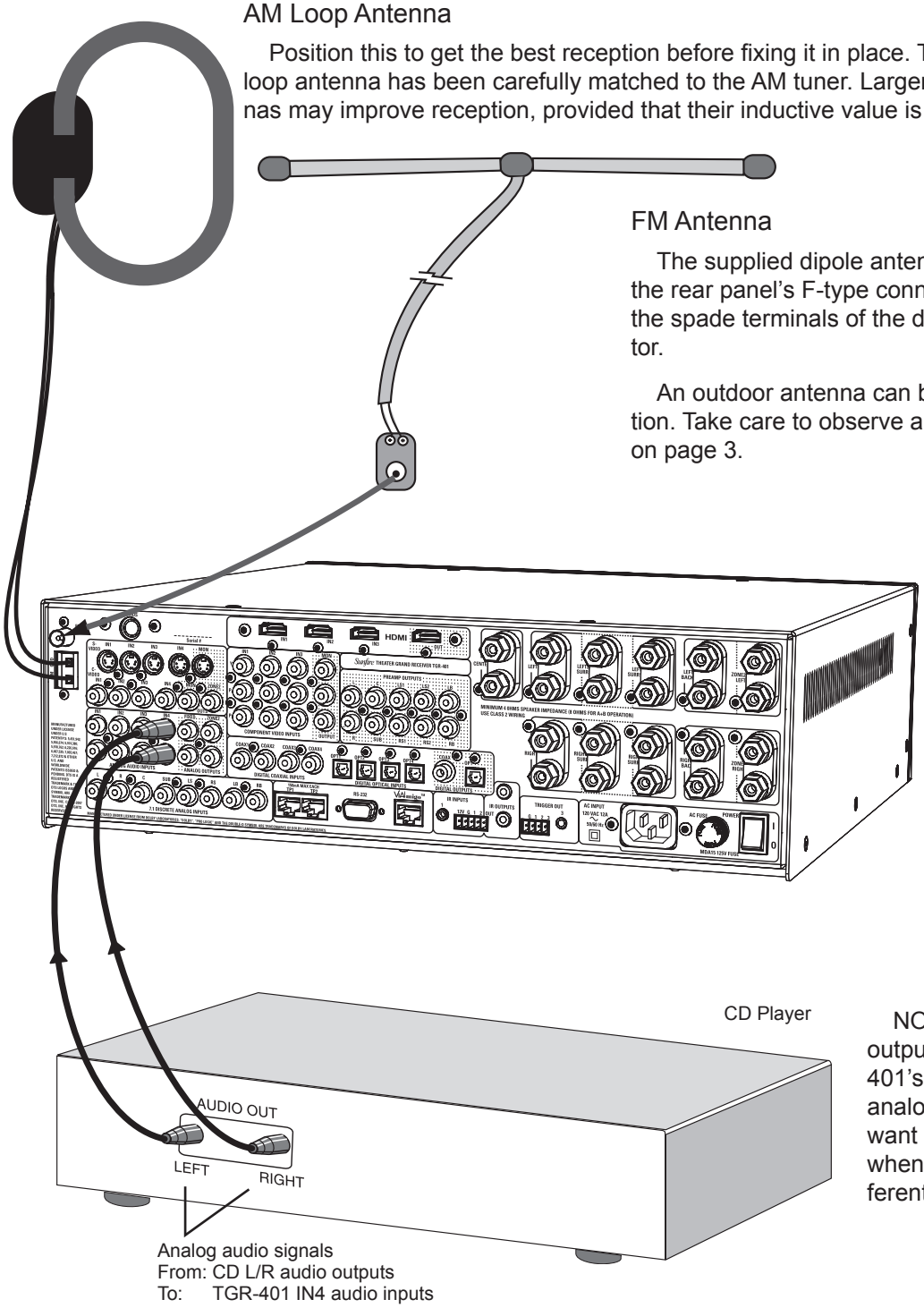
AM Loop Antenna

Position this to get the best reception before fixing it in place. The supplied loop antenna has been carefully matched to the AM tuner. Larger Loop antennas may improve reception, provided that their inductive value is around 18 uH.

FM Antenna

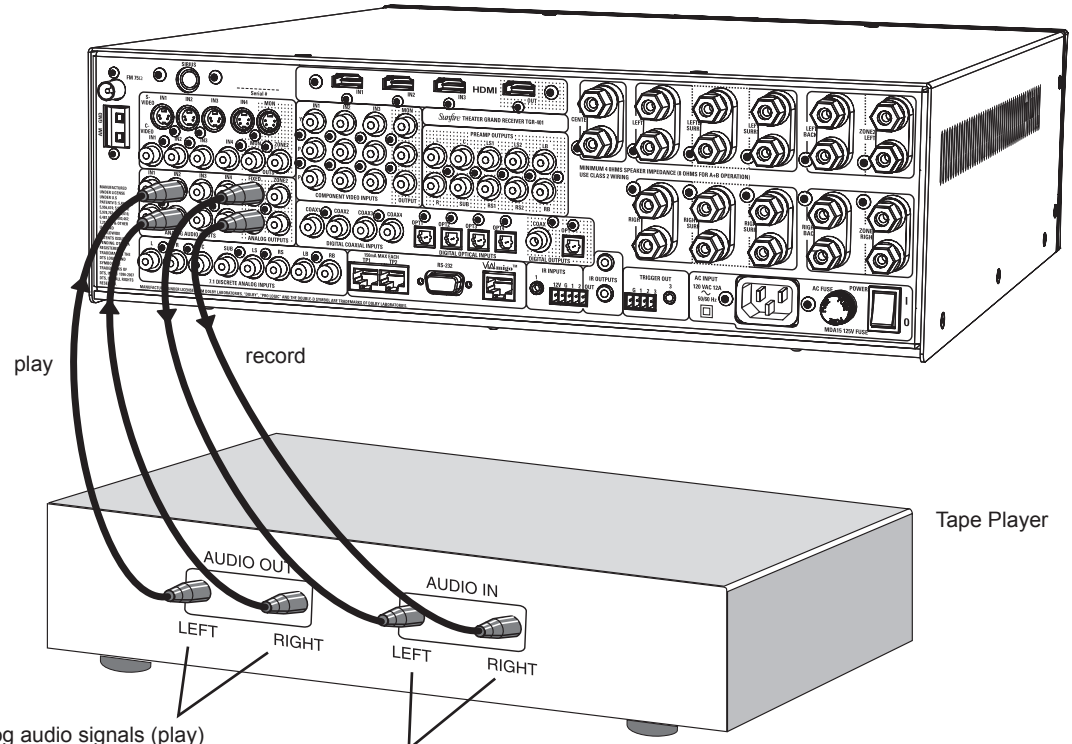
The supplied dipole antenna and its adaptor push onto the rear panel's F-type connector as shown. First screw the spade terminals of the dipole antenna onto the adaptor.

An outdoor antenna can be used for improved reception. Take care to observe all the safety instructions shown on page 3.



NOTE: If your CD has a digital output, connect it to one of the TGR-401's digital inputs. Also connect the analog CD inputs (as shown) if you want this source available in Zone 2 when the Main Zone is playing a different source.

Tape Player Connections



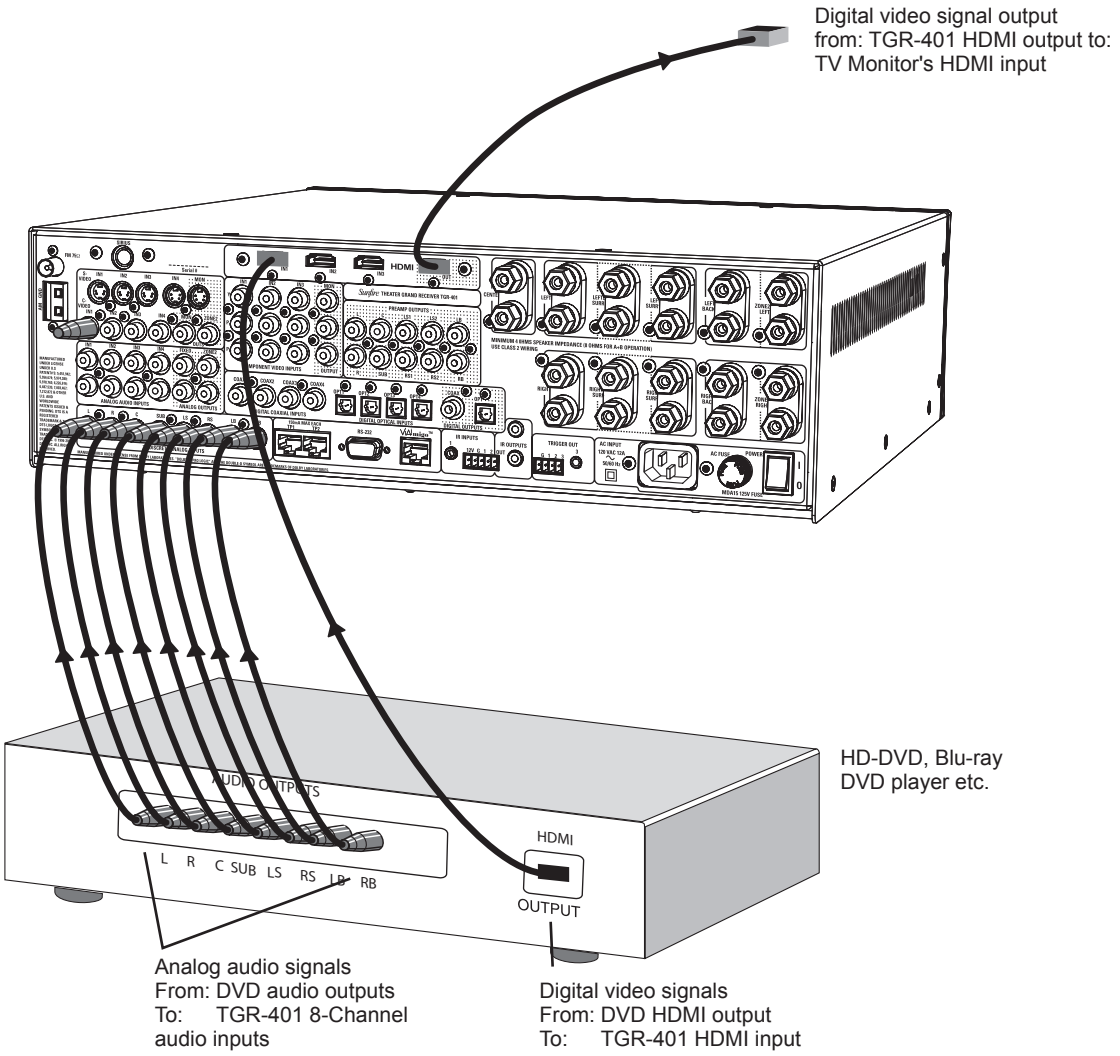
Analog audio signals (play)
From: Tape player audio outputs
To: TGR-401 IN2 L/R audio inputs

Analog audio signals (record)
From: TGR-401 FIXED L/R audio output
To: Tape Player L/R audio input

The tape player's output can be connected to the analog audio inputs.

The tape player can record the analog audio from the selected source. If you are playing a digital source, the tape player will receive a downmixed stereo analog signal for recording.

8-Channel Analog Input Connections (Blu-ray or HD-DVD)



The 8-CH input is really useful as an input for HD-DVD or Blu-ray DVD players capable of decoding Dolby True HD.

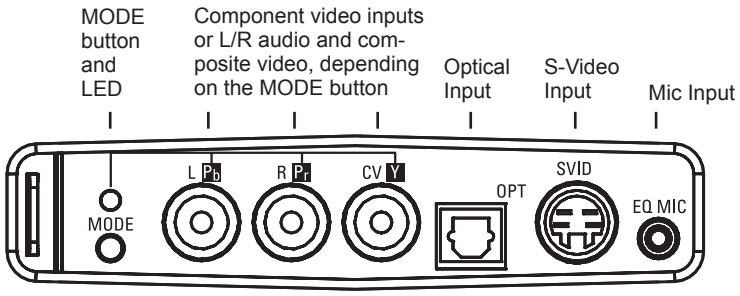
If your DVD player has its own Dolby decoder you can connect it as shown. The surround back inputs can be left disconnected if your player does not have these outputs.

Note: The eight channels of audio from the DVD are all processed by the TGR-401 DSP, so bass management and surround mode selections will still be functional. Additionally there is an 8-channel source direct mode. This provides the highest fidelity signal path for SACD or DVD-Audio, free from any coloration or processor circuitry.

The 8-CH input processes all 8 channels only for the Main Zone. Zone 2 only receives the left and right channels.

The video output in this example is connected to TGR-401 HDMI input 1. Use the OSD 8-CH input configuration menu to lock the 8-channel input to HDMI video (see page 33 for details of the OSD input menu). Then, whenever the 8-channel input is selected, the HDMI video will also be selected.

Front Panel Input Connections



The front panel input section is the ideal place to make quick connections to equipment such as gaming consoles or video cameras. There is also a connection for the microphone used in the auto-setup and auto-EQ procedures.

Using the MODE switch, the three front panel RCA input jacks can quickly be configured as component video inputs, or left and right analog audio and composite video inputs.

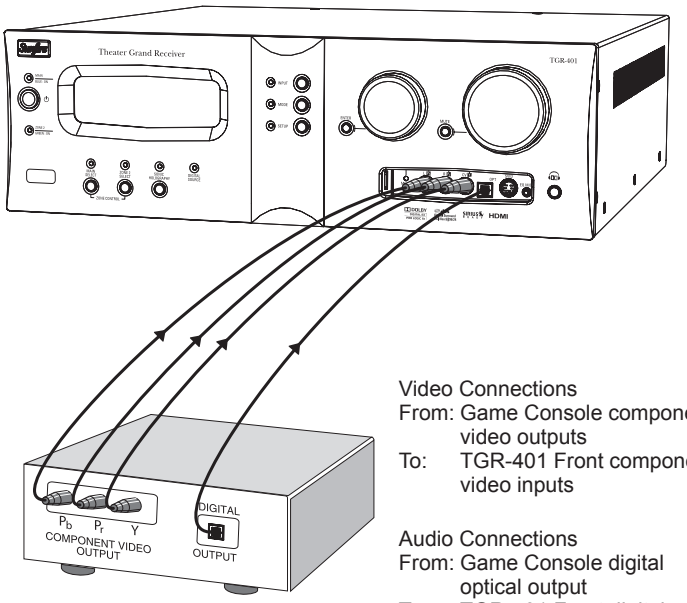
For component video connections, press the MODE switch until the LED next to it turns on. Then connect the component video outputs from your gaming console or other equipment, to the TGR-401 front RCA inputs. To get audio in, use the digital optical input.

If your video camera has left/right analog audio connections and composite video, you can connect it as shown below.

Press the MODE switch until the LED next to it turns off.

The mode can also be changed using the remote control FTRMD button in TG401 and Zone2.

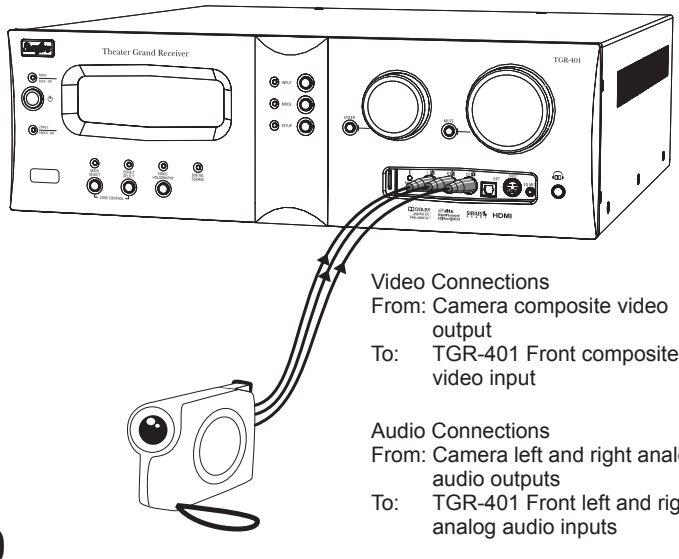
Component Video with Digital Audio



Video Connections
From: Game Console component video outputs
To: TGR-401 Front component video inputs

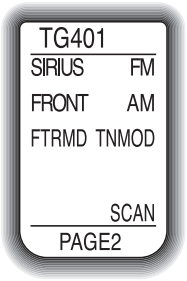
Audio Connections
From: Game Console digital optical output
To: TGR-401 Front digital optical input

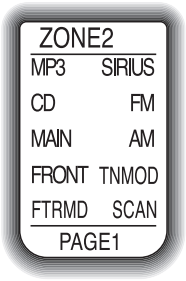
Left/Right Analog Audio and Composite Video



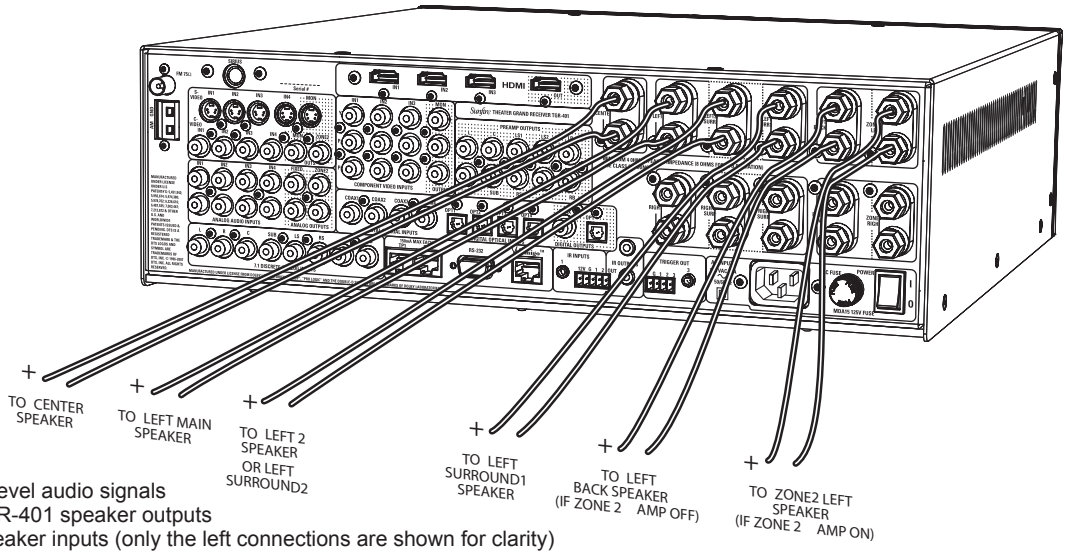
Video Connections
From: Camera composite video output
To: TGR-401 Front composite video input

Audio Connections
From: Camera left and right analog audio outputs
To: TGR-401 Front left and right analog audio inputs





Output Connections


TO CENTER SPEAKER
TO LEFT MAIN SPEAKER
TO LEFT 2 SPEAKER OR LEFT SURROUND2
TO LEFT SURROUND1 SPEAKER
TO LEFT BACK SPEAKER (IF ZONE 2 AMP OFF)
TO ZONE2 LEFT SPEAKER (IF ZONE 2 AMP ON)

Speaker-level audio signals
From: TGR-401 speaker outputs
To: Speaker inputs (only the left connections are shown for clarity)

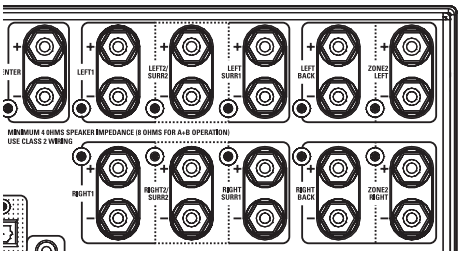
Speaker-Level Outputs

The TGR-401 speaker output posts accept bare wire, speaker, pins, lugs, dual-banana and single-banana connectors. Use good quality speaker connectors and speaker wire.

If you are using banana plugs, make sure the TGR-401 output posts are fully tightened by hand.

Always turn off the TGR-401 when you make speaker connections.

It is very important to check that the negative and positive speaker wires do not touch. This will prevent damage to the TGR-401's internal amplifiers.



Using the OSD Binding Post menu, you can choose Zone 2 to be powered, in which case, the surround back binding posts are not active when Zone 2 is in use.

In this menu, you can also choose if two amplifier channels power a second set of left/right speakers, or a second set of surround speakers. This allows you to connect two sets of front left/right speakers, and quickly switch between them for home theater or stereo use. Or you could connect two sets of surround speakers and quickly switch between them, or run both pairs, depending on your source and mode.

MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

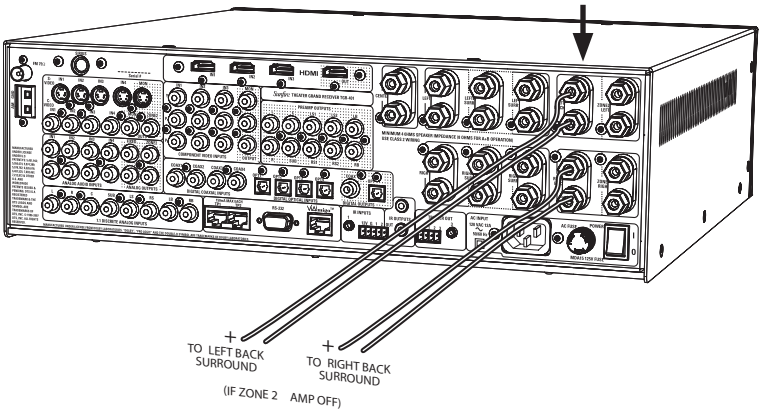
SETUP	CHOICES
INPUTS	→
SPEAKERS	→
VIDEO	→
MAIN ZONE	→
ZONE 2	→
CONTROL	→
DIGITAL OUT	DN MIX/THRU
DIMMER	LOW/MEDIUM/HIGH

SPEAKERS	
AUTO SETUP	→
SPEAKER SIZE	→
DISTANCE	→
LEVEL CALIBRATION	→
EQ	→
BINDING POSTS	→

BINDING POSTS		CHOICES
AMP SECTION	ON	ON, OFF
FRONT	ON	ON, OFF
SURROUND	ON	ON, OFF
CFG POST	OFF	OFF, FRONT, SURR
POWERED Z2	OFF	ON/OFF

Line-Level Outputs

The line-level audio outputs can be connected to external power amplifiers and powered subwoofers. For example, you could use an external amplifier to power Zone 2 speakers, and use the internal amplifiers to power the surround back speakers.

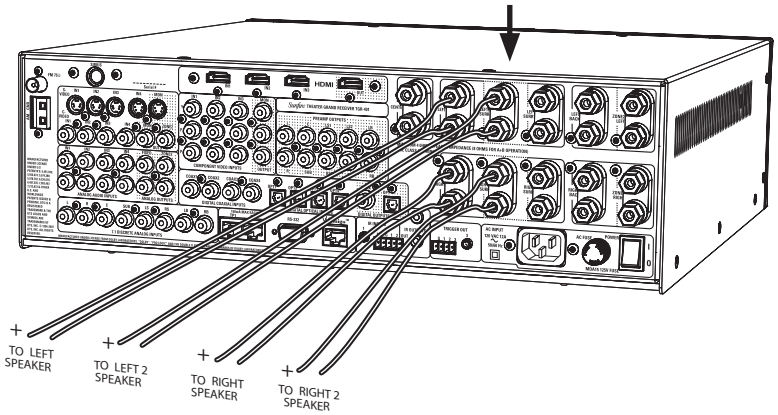


Surround Back Outputs

The surround back speakers can be connected to these outputs.

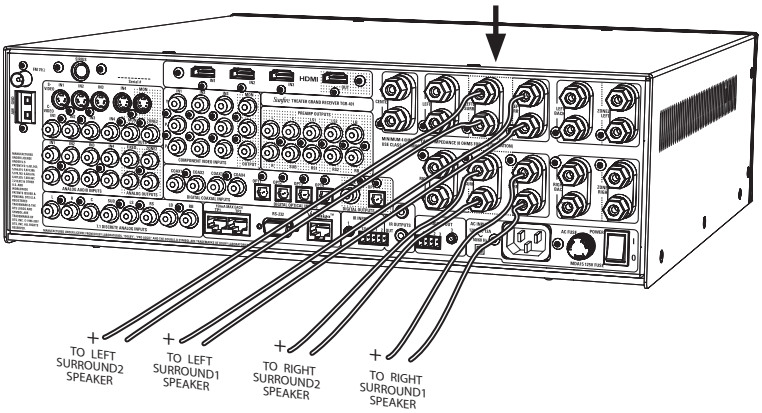
If you do not have surround back speakers, or do not want to use them all the time, you can use the TGR-401's intelligent speaker switching to "borrow" the surround back amplifier channels to power your Zone 2 speakers instead. When Zone 2 is powered on, the surround back speakers will turn off in the main zone. Likewise, when Zone 2 is powered off, the surround back speakers in the main zone will automatically turn back on. See the speaker connections for Zone 2 on the next page.

You can still use the line-level surround back outputs to run an external amp and power your surround back speakers. The line-level Zone 2 outputs can run an external amp and power your Zone 2 speakers.



Left/Right 2 Outputs

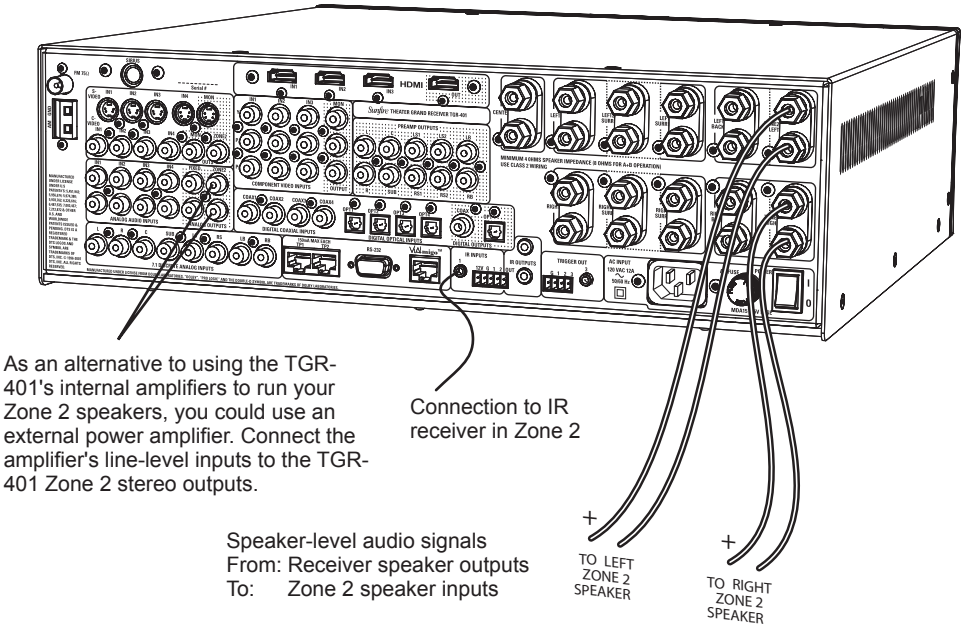
If you have two sets of left/right speakers, you can turn one pair on and one pair off. For example, one pair might be a pair for home theater, and one for stereo listening. Using the Binding Posts menu, you can easily switch between each pair.



Surround 2 Outputs

If you have two sets of surround speakers, you can turn one pair on and one pair off. For example, one pair might be a pair of bipole surround speakers, and one a pair of conventional surround speakers. Using the Binding Posts menu, you can easily switch between each pair. For long theaters with tiered seating, you can also configure both to be active simultaneously (8 ohm minimum per speaker in this case).

Zone 2 Connections


As an alternative to using the TGR-401's internal amplifiers to run your Zone 2 speakers, you could use an external power amplifier. Connect the amplifier's line-level inputs to the TGR-401 Zone 2 stereo outputs.
Connection to IR receiver in Zone 2
Speaker-level audio signals
From: Receiver speaker outputs
To: Zone 2 speaker inputs
TO LEFT ZONE 2 SPEAKER
TO RIGHT ZONE 2 SPEAKER

Zone 2 can play stereo analog sources independently of the Main Zone, or play the same source. Zone 2 can only play a digital source if the Main Zone is playing the same source.

If you want the TGR-401 speaker-level outputs to run your Zone 2 speakers, under the OSD Binding Post menu, set "POWERED Z2" to ON.

Speaker wires are connected to the speaker outputs as shown above, and are run out to Zone 2 speakers, located in another room or area of your house.

If you have an external power amplifier to run your Zone 2 speakers, connect the TGR-401 Zone 2 line-level stereo outputs to the inputs of your amplifier. Connect your Zone 2 speakers to the amplifier with speaker wire. This method provides full-time 7.1 for the home theater, plus an amplified Zone 2.

The wire from an optional IR sensor is shown connected to the TGR-401 Zone 2 IR input. The TGR-401 is compatible with most makes of IR sensors and equipment.

The sensor can be located in a suitable area of Zone 2, allowing you complete control of the volume and source selection. Zone 2 can also be controlled from the front panel, using the remote's Zone 2 buttons.

The optional Olé-2SF Film Interactive touchpads are preconfigured to operate Zone 2. They connect to either the TP1 or TP2 connectors on the TGR-401 rear panel. The touchpads allow you to control the source selection, volume, bass, and treble. Also, they will pass IR commands back to the TGR-401, as they have an internal IR receiver. For custom programming, please contact your Sunfire dealer.

Zone 2 OSD menus

MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

SETUP	CHOICES
INPUTS	→
SPEAKERS	→
VIDEO	→
MAIN ZONE	→
ZONE 2	→
CONTROL	→
DIGITAL OUT	DN MIX/THRU
DIMMER	LOW/MEDIUM/HIGH

ZONE 2		CHOICES
FIXED VOLUME	N	N, 0.0 - 100.0
PWR UP MAX VOL	60.0	0.0 - 100.0
PWR UP MIN VOL	0.0	0.0-100.0 MUST BE LESS THAN POWER UP MAX VOLUME
MAX VOLUME	100.0	0.0-100.0 MUST BE MORE THAN POWER UP MAX VOLUME
PWR UP SOURCE	LAST	LAST, INPUT 1,INPUT 2, ... INPUT 8, AM, FM, SIRIUS, FRONT
BASS	0	+14 TO -14, 2 DB STEPS
TREBLE	0	+14 TO -14, 2 DB STEPS
BALANCE	0	-20 TO +20, 1 DB STEPS

SPEAKERS	
AUTO SETUP	→
SPEAKER SIZE	→
DISTANCE	→
LEVEL CALIBRATION	→
EQ	→
BINDING POSTS	→

BINDING POSTS		CHOICES
AMP SECTION	ON	ON, OFF
FRONT	ON	ON, OFF
SURROUND	ON	ON, OFF
CFG POST	OFF	OFF, FRONT, SURR
POWERED Z2	OFF	ON/OFF

The ZONE 2 menu allows you to:

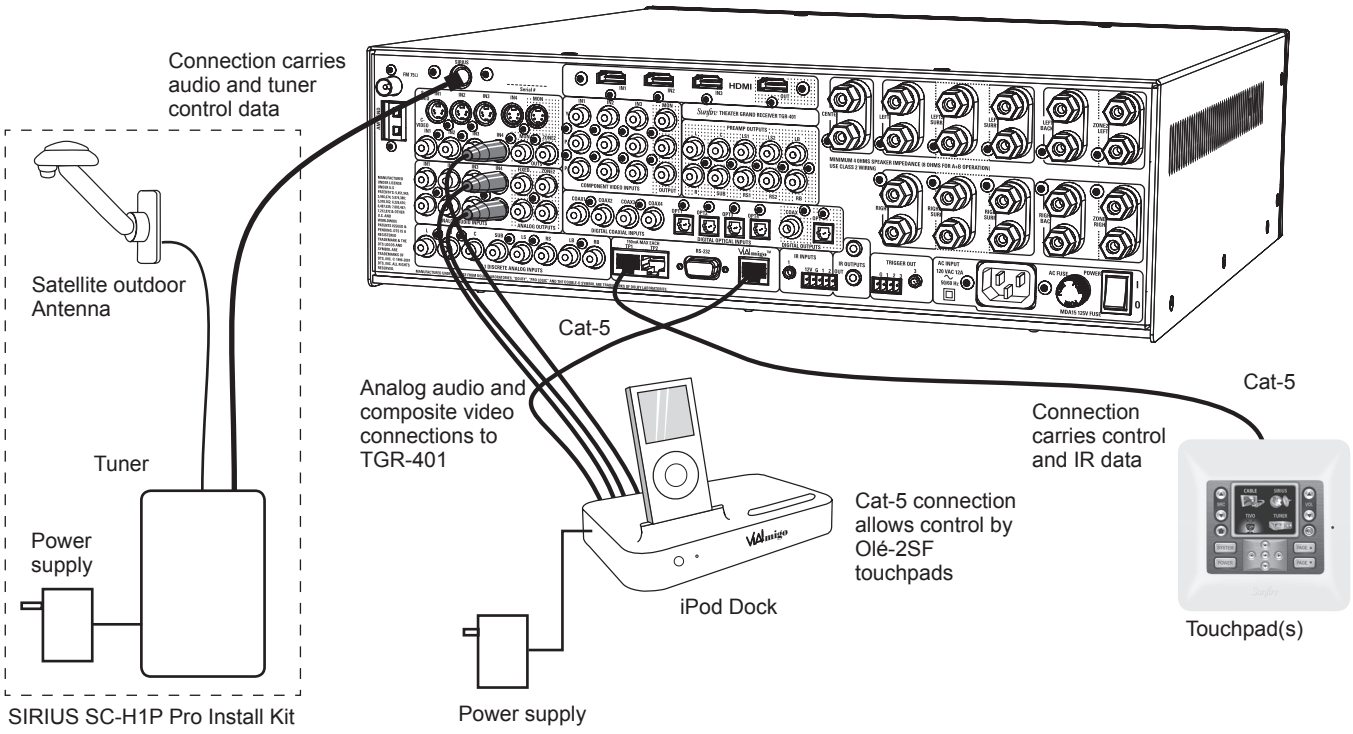
- Set a fixed volume
- Set max and min volume at Zone 2 power-up
- Set a maximum volume
- Select a source to play at Zone 2 power-up
- Adjust bass, treble and balance

The Binding Posts menu allows you to:

- Power the Zone 2 speakers or
- Power the Main Zone surround back speakers

Optional Connections

Please contact your Sunfire dealer if you would like to order the following options:



SIRIUS Satellite Radio

SIRIUS Satellite Radio offers over 120 channels of the best entertainment and completely commercial-free music.

Included as part of your subscription with SIRIUS Satellite Radio, you can receive more than 65 original music channels, and 55 channels of sports, news and entertainment.

The SIRIUS SC-H1P Pro optional kit includes an outdoor satellite antenna and a Satellite Radio tuner. Transmissions are received via satellite, tuned using the TGR-401 SIRIUS controls, and the audio data is transferred to the TGR-401.

For more information regarding SIRIUS Satellite Radio, please visit www.sirius.com.

See page 63 for more details.

VIA!migo iPod dock

This ultimate iPod interface turns your iPod into a home-based multi-room audio and video player (video iPod required). You can control your iPod from an Ole!-2SF touchpad, or using the TGR-401 remote control. Here are a few features:

- View 'Now Playing' info (Artist, Song, etc.) on your TV monitor using the composite video output or S-Video output to the TGR-401
- Sends the same metadata to the Olé-2SF touchpads for remote viewing of song information
- IR receiver for direct control
- IR and RS-232 control
- Discrete commands for every function
- Recharges the iPod battery

See page 61 for more details.

Olé-2SF Touchpads

These proprietary touchpads allow you to operate Zone 2 controls, such as source selection, volume, tuners, bass and treble and power. An internal IR receiver also allows the remote control to be used. IR commands can pass through to the TGR-401 and its IR output.

Touchpads can be programmed with a PC running SunTools™ software to control the Main Zone, such as source selection, volume, tuners, bass, treble, DSP modes, and OSD functions. You can also customize each touchpad.

Each touchpad has connections for local IR receivers, emitters, and local sensing.

Connections are made using standard Cat-5 cable to the TGR-401 TP1 or TP2 connectors.

See page 66 for more details.

Remote Control

The TGR-401 remote control is many remotes in one. There are ten device buttons, five on either side of the display, and each allows the remote to operate one piece of equipment.

From the factory, the device buttons on page 1 are labeled: HD/BD, SAT, DVR, MP3, DVD, CABLE, VCR, CD, ZONE2, and TG401.

Only the TG401, ZONE2 and MP3 buttons are pre-programmed, and these allow the remote to operate your TGR-401, Zone 2 and the optional VIA!migo iPod dock. The remote can be set to operate your other remote controlled equipment. This is done in three ways from the hidden SETUP menu:

1. Entering a code from the tables at the end of this manual
2. Stepping through the codes
3. Learning from your other remotes

See Remote Setup on page 27 for more details.

LCD Display

The top line shows the present device, mode or status, and it shows when a remote command is being transmitted. The bottom line shows the page number, status and basic instructions during programming.

The main part of the display shows the labels of the ten device buttons. You can change any label and customize the remote to fit your system. Note: this is not a touch-sensitive screen, just a way of labeling the device buttons on each side, and showing instructions and status.

Contrast

The contrast of the display can be changed by holding down the MAIN button and pressing the navigation pad UP or DOWN.

Light

The button on the right side of the remote briefly turns on the lights for the buttons and display. Pressing it again will turn it off. The number of seconds can be varied, or it can be disabled.

Device Buttons

Once you press a device button, all the device buttons change label and function to become buttons to operate your device. There are multiple pages per device, and you can move between them using the PAGE button.

PAGE

Use this to jump to various display pages. For example, if you press the TG401 device button, the display changes to show buttons that control your TGR-401. If you press PAGE, the display will move to page 2, showing more functions for the TGR-401.

MAIN

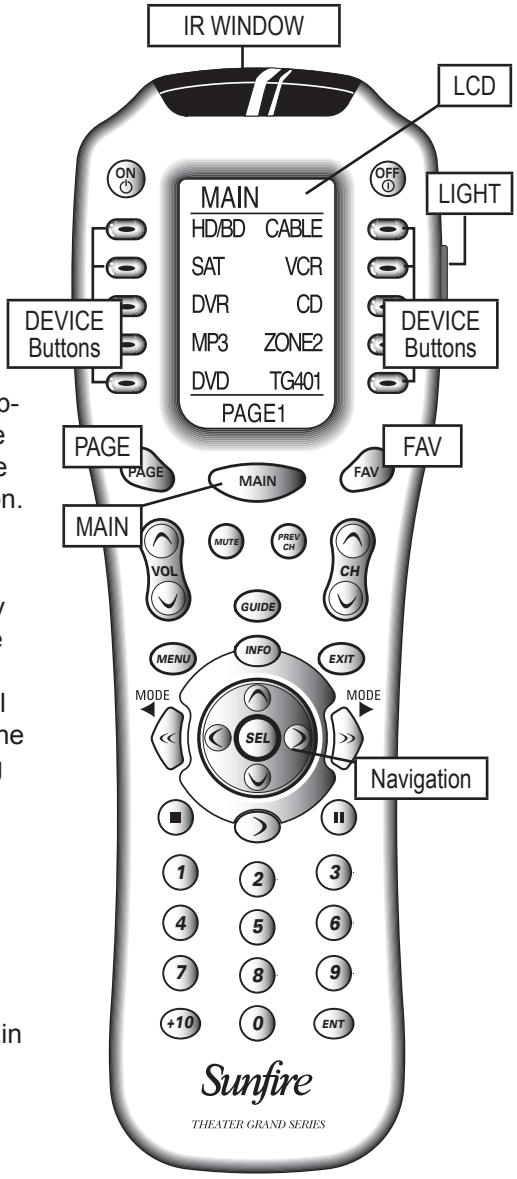
This button will return the remote display back to the Main menu. Depending on which mode you are in, it may take two or more presses. This will help you get back to the Main menu if you get lost in the menus.

FAV

This button allows you to step through five display pages of your favorite TV and radio stations. These can be set and re-labeled to suit.

Navigation Pad

This pad and surrounding buttons are used to operate standard DVD menus, and VCR and Tape transport controls. In TGR-401 mode, if you press MENU, the On Screen Display will appear and the navigation buttons can be used to select and adjust the various items.



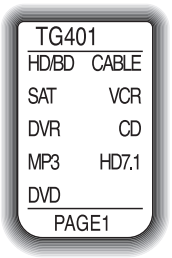
Batteries

The remote takes four AAA batteries inside the rear compartment. These should last about six months in normal use, before a low-battery warning appears.

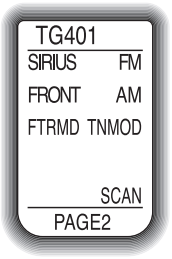
Operating the TGR-401 with the Remote

1. Press the remote's MAIN button to make sure the display is on the main display menu.

2. Press the TG401 device button to set the remote to operate your TGR-401. The display changes to show the TGR-401 input selections.



3. Press PAGE to reach three more pages of the menu.

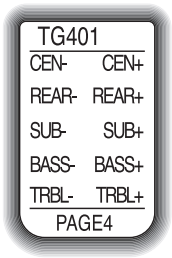


Page 2 shows selection of the front panel input, the SIRIUS tuner option, FM tuner, AM tuner, FRTMD (front mode), and TNMOD (tuner mode).

Page 3 shows:DIM– and DIM+ allow you to dim the TGR-401 display.

DHP ON and OFF allow you to turn the Dolby Headphone circuit on or off.

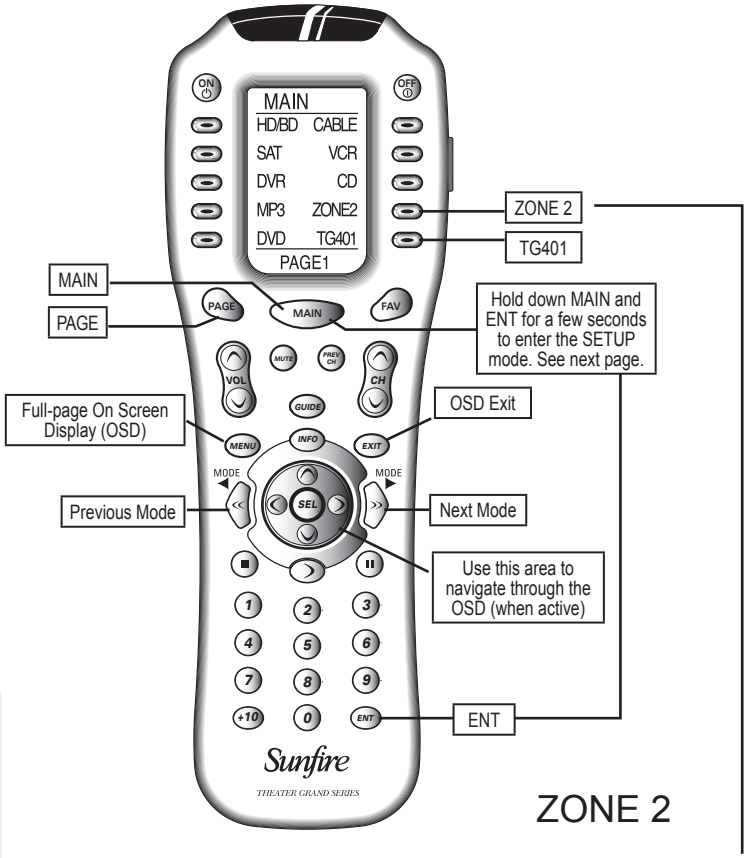
HOL ON and OFF allow you to turn the Sonic Holography on or off.



TGR-401 Pages

Page 4 allows you to adjust the volume trims for center, surrounds, and sub, and adjust the bass and treble. On the right is '+' (increase level) and on the left is '-' (decrease level).

4. The following buttons are also programmed: ON, OFF, VOL*, and MUTE*. MENU and EXIT allow you to enter and leave the OSD menus, and the navigation buttons let you move through the OSD menus. INFO shows details of the current surround mode, and extra details if MP3 or SIRIUS are chosen as inputs. The number pad accesses the tuner presets or direct tuning, and CH+/- steps through stations or presets (depending on the tuning mode TNMOD). The MODE buttons on either side of the navigation pad allow you to select the different surround modes and offers detailed tuning features for controlling your SIRIUS satellite radio.



* VOL and MUTE operate the TGR-401, even when the remote is set to operate other source components. See PUNCH on page 28.

5. The pre-programmed MP3 menu allows you to control the optional VIA!migo iPod dock. In this mode, the navigation and other buttons allow you to select song titles, play, pause and stop selections.

ZONE 2

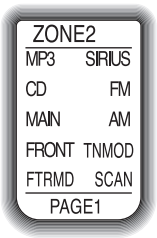
1. From the main display menu, press ZONE2 to access features of the second zone. Page 1 shows the input selections including the front panel input.

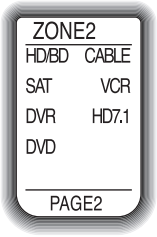
2. In this mode, the hard buttons operate Zone 2, such as Power, Volume, Mute, and the Tuner controls and presets.

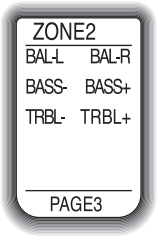
3. Press PAGE to reach two other pages of the menu.

   Page 2 shows some other Zone 2 input selections.

   Page 3 shows the adjustments for Zone 2 balance, bass, and treble.







Zone 2 Pages

Note: Zone 2 can be turned on even if the Main Zone is off.

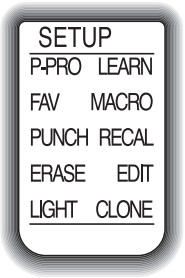
See page 48 for more Zone 2 details.

Remote Setup

You must enter the SETUP mode to program the remote control for the other components in your system, and to customize it for your convenience. There is only one way to enter the SETUP mode:

Hold down both the MAIN and ENT buttons for a few seconds until SETUP appears in the display.

The SETUP display shows 10 options. These are described in more detail as follows:



P-PRO

The remote is pre-programmed to operate many types of equipment. The P-PRO mode allows you to enter a 3-digit code to recall the commands for each of your system components.

1. Find the make of your TV, DVD, VCR, CD and other components, then look at the tables on page 56. Make a note of the various codes for each piece. Note that some TV/VCR combined units may use VCR codes, not TV.
2. Sit in a position in front of your equipment, and make sure that all components are turned off.
3. In the SETUP mode, press P-PRO and the device labels will appear.
4. Select the device button you want to program, then choose the device table you took the code from. For example, for a TV, press TV twice. If you want AUX to control a VCR, press AUX, then press VCR.
5. You can now enter a code using the remote's keypad, or UP or DOWN. After the third digit is entered, the remote transmits a power command. If the component turns on, press SAVE and then EXIT. Go to step 7.
6. If you could not find a code which works, hold the UP button to step through all the codes in the table for that device. Release UP when your equipment turns on. If you go past, press DOWN. Press SAVE and then EXIT.
7. The display will change to show the devices again, still in the P-PRO mode. Repeat steps 4 to 7 until all your equipment is working.
8. Press MAIN to return to the main menu from any setup mode.
9. Test the remote to see which buttons will operate your equipment. For example, if you were trying to control your TV, check the power, channel up and down, and volume up and down. If some of these buttons are not working correctly, choose another code for that manufacturer, or you can learn over those not working by using the LEARN mode.

NOTE: If you accidently "learn over" one or more of the buttons which operate the TGR-401, fear not. You can use ERASE (see next page) to reset either the individual buttons, or the whole TGR-401 bank. After erasing, the buttons will revert to their TGR-401 programming.

FAV

This mode allows you to enter your favorite TV and radio stations.

Note that the following procedure assumes you have already programmed your remote to operate your TV, radio tuner and other equipment. The keypad must already be able to select channels on your TV or SAT, and any TGR-401 tuner presets.

Before using FAV mode, you can use the EDIT mode to change the labels in the FAV display to show your favorite station call signs or reminders. You can also delete the labels from unused buttons, or move all your most favorite FAV labels to page 1.

1. In the SETUP mode, select FAV.
2. The FAV display will appear, and you can step through five pages using PAGE or FAV to locate the favorite station ID, such as HBO or CBS for example.
3. Select the device, such as SAT, TV or TGR-401, to learn station commands from.
4. Use the keypad to enter the channel number. For channels below 10, you should enter a 0 (zero) first. If your equipment needs it, you may have to enter the ENT button after the channel is entered. If you want to add a short delay, press PAUSE (▮▮).
5. When you have finished with one channel, press the CH UP (molded button) to save it. Move on to the next favorite channel and program it in the same way. Repeat this for all the channels and devices. Press MAIN to return to the top menu.
6. Now, if you press the molded FAV button, the favorite channels appear in the display, and the ones you programmed will take you to your favorite channel or radio station.
7. The commands are sent in sequence, for example for channel 13, first the 1 and then the 3 are sent. Wait a few seconds before switching between favorites, or your TV may receive for example, the 1 of one button and the 2 of the next.

Remote Setup continued

PUNCH

This mode allows you to set up the volume, channel up/down and transport buttons so they will work for your main devices, no matter which device the remote is set for. For example, the volume buttons can operate the TV, even if the remote is set to VCR. The channel buttons can operate the VCR, even if the remote is set to TV.

1. In SETUP, select PUNCH and the display changes to show VOL, CH, PLAY, MENU, and POWER. The MENU selection will make the eight transport buttons around the navigation pad punch through.
2. Select one of these buttons, for example VOL.
3. Press a device button for the device you want the Volume commands to appear in (punch TO).
4. Press a device button for the device you want to learn from (punch FROM). These settings are saved.
5. Repeat steps 2 to 4 until you have punched to all devices you want.
6. Use MAIN to return to SETUP.

NOTE: To erase Punch commands from a device and so return buttons to their previous programming: Repeat steps 1 and 2, then press the device button twice. Repeat for other devices, then press MAIN to return to SETUP.

The operation of the optional VIA!migo iPod dock relies on the navigation buttons when the remote is set to operate the MP3. Therefore, it is best that you do not punch-to the MP3. Also, do not punch-to the TG401, in case you program over the navigation buttons used with the OSD menus and the SIRIUS tuner operation.

ERASE

Use this mode to erase commands stored in the remote. This does not affect the labels, just the stored IR commands. The pre-programmed commands for the TGR-401 will not be lost, as they can be recalled.

1. In the SETUP mode, select ERASE and the display will show LEARN, FAV, MACRO and EXIT.
2. If you select LEARN, press ALL to erase all learned buttons, or KEY to erase one device at a time, or DEVIC. If you use KEY, press MAIN and EXIT when you have erased all the devices you want.
3. If you select FAV, press ALL to erase all favorites, or KEY to erase single favorites. Note that the labels are not erased.
4. If you select MACRO, press ALL to erase all macros, or KEY to erase macros, one device at a time.
5. Press EXIT to return to the SETUP menu, and press MAIN to return to the main device menu.

LIGHT

This mode allows you to either disable the light, or change the number of seconds it stays on. (The light is inactive while in the SETUP mode).

1. In the SETUP menu, select LIGHT and the display will show ON, time in seconds, SAVE and EXIT.
2. If you press ON, it changes to OFF and disables the light. This is useful if you want to save battery life, or if the kids like to use the remote as a flashlight or Light Saber®.
3. Use the keypad to enter the number of seconds you want the light to stay on. If you enter 00, it only stays on while the light button is held down.
4. Select SAVE, or press EXIT to make no change. Either of these will return you to the SETUP menu.

LEARN

The remote can learn commands from other remote controls. This is useful if the pre-programmed commands do not operate some of your equipment, or certain buttons do not work, or you want to customize key functions.

NOTE: PAGE, MAIN, and FAV cannot be learned over.

1. Find your original remote and make sure it has good batteries, and it operates your equipment perfectly. In the following example, the Sunfire remote will learn the PLAY command from a DVD remote.
2. Point the DVD remote into the Red IR top window of the Sunfire remote. Place them on a flat surface, about 1 to 2 inches apart, and avoid bright lighting or sunlight.
3. In the SETUP mode, press LEARN.
4. Select the DVD device button and the display will change to show some common DVD labels (remember there are two pages).
5. Select the PLAY button just above the navigation pad. The display will show “READY.”
6. Press your DVD remote’s PLAY button. The display will show “GOOD” if it has been accepted. If it shows “FAIL,” press PLAY again.
7. Press another button on the Sunfire remote and repeat the procedure until all the DVD buttons you need are learned.
8. Press MAIN once to return to the LEARN mode, twice for SETUP and three times for the MAIN menu.

Remote Setup continued

9. Try out the Sunfire remote and see if the learned buttons will successfully operate your equipment. You may find that some commands cannot be learned, because some are non-conventional, or too long or too short.

10. The EDIT command can be used to change the labels if some of the standard labels do not correspond to your original remote buttons.

MACRO

The macro mode allows you to set up certain buttons to transmit up to 190 commands in sequence. For example, a single button press could turn on all of your home theater equipment, and set the TGR-401 to DVD, set the TV to channel 3, and set the DVD to play, make the tea and put the cat out.

The power ON and OFF buttons can be programmed as macros. The ten device buttons can also be programmed, although these will only be activated if the device button is held down for a few seconds.

Note that the macro buttons are independent of which device the remote is set for. So there is only one power macro etc.

1. In SETUP mode, press MACRO.
2. Press one of the buttons you wish to program as a macro, such as ON, or a device button.
3. Press up to 190 buttons you would like the macro to store. Do this in the exact order you want them to be transmitted. Use the PAGE, MAIN and direct buttons to find buttons to use in the macro.
4. To add a delay between steps, you can add 0.5 seconds each time you press PAUSE (❚❚). This does not take up a step. If pause is your first step, then the macro will not work unless the button is pressed and held down.
5. Press the Channel UP button to save your macro.
6. Repeat this procedure to program more macros, and press MAIN to return to the main menu.
7. Try out the macros to see if they work OK. It may take some time to transmit all the commands in sequence, so keep the remote pointing at your equipment and do not move it during this time.

RECAL (Recall)

This mode lets you quickly see the three digit codes you have assigned to each device. This is useful if you want to check the tables and find other codes which may work better.

1. In the SETUP mode, select RECAL. The device labels and their codes will appear. Press PAGE to see other codes. Make a note of the codes.
2. Press MAIN to return to the main device menu.

EDIT

This mode allows you to change the labels in the display to suit your system. You can change device labels, or the buttons on page 1 or page 2 of a device, or the FAV labels.

1. In the SETUP menu, press EDIT.
2. Press the TEXT button. The list of devices appears.
3. Navigate to the device and page where there is a button label you want to EDIT, selecting between the FAV, MAIN, DEVICE, then using the PAGE button. Press the button you wish to edit. The first character of your button label blinks.
4. Change the character using the number keys. Move to the next space by pressing the RIGHT navigation button.
5. When finished editing, press the button you just edited, and the new text will be saved.
6. You can edit other buttons, or press MAIN a few times to return to the main menu.
7. With EDIT, you can also make labels where none exist. Move to a blank device, and add your text. Then you can use LEARN to add a remote code from an original remote.

To edit the name of a device button, proceed as follows:

1. In the SETUP menu, press EDIT.
2. Press the TEXT button. The list of devices appears, and EDIT will appear at the top of the screen. Do not press a device button just yet.
3. Press the PAGE button twice until the MAIN appears at the top of the screen instead of EDIT.
4. Select the device button to be edited and the first character will blink. (Press PAGE to reach the second set of devices if required.) Change the character using the number keys. Move to the next space by pressing the RIGHT navigation button.
5. When finished editing, press the device button just edited, and the new name will be saved.
6. To edit the word MAIN, (for example if you are setting up a system in the DEN, follow steps 1 and 2 above, then press PAGE four times until you reach a screen that just has MAIN at the top, and MAIN just below. Press this device button and edit the word to suit. This will now appear at the top of the remote display in normal use.

CLONE

This feature allows you to easily copy all of the commands and labels from one Sunfire remote (of the same type) to another.

1. Set both remotes on a flat surface, with their IR windows pointing towards each other, about 1 or 2 inches apart.
2. In the SETUP menu for both remotes, press CLONE and the display will change to show SEND, RCV (receive) and EXIT.
3. Press SEND on the remote you want to copy from.
4. Press RCV on the remote you want to copy to.
5. When you are ready, press START on both remotes. It may take up to 40 seconds, so do not move the remotes during this time. The remote will flash “GOOD” if it has successfully learned all the commands. If it flashes “FAIL,” then repeat this procedure.
6. Press MAIN to return to the main menu.

Hiding and Adding Pages

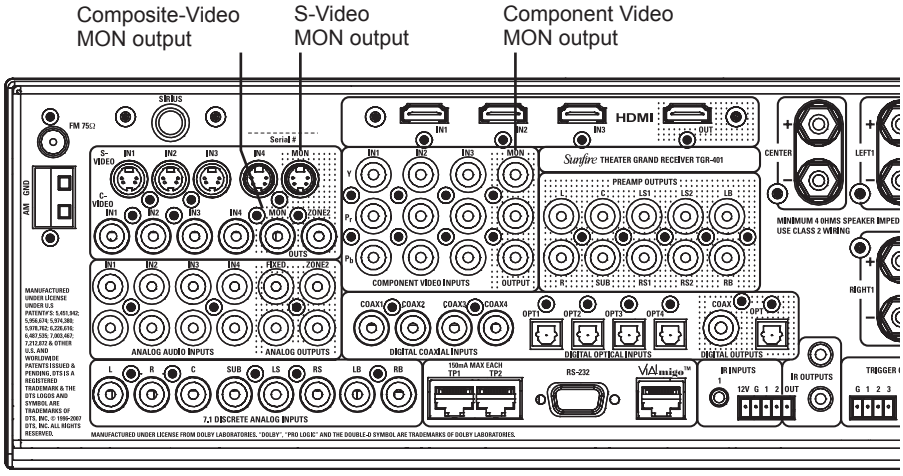
1. In the SETUP menu, press EDIT, and the display shows TEXT and PAGE.
2. Press the PAGE button on the right.
3. Press the DEVIC button and choose a device button. Use PAGE to navigate to the page of the device to hide.
4. The top of the screen indicates “ADD?” or “HIDE?” Press the LIGHT button on the remote's right side to toggle between hide and add. The current page can be hidden, or recalled (added) later.
5. Repeat steps 3 and 4 to hide or add other pages. Press MAIN to return to normal operation.
6. To hide one of the MAIN pages, select MAIN in step 3 instead of DEVIC, then follow step 4 to hide it.

On Screen Display (OSD)

Video Connections

The On Screen Display (OSD) is available at the composite video, S-video, or component video MON outputs. Make sure that your TV monitor's video input is connected correctly to one of these outputs.

Note that the HDMI output does not support OSD functions.



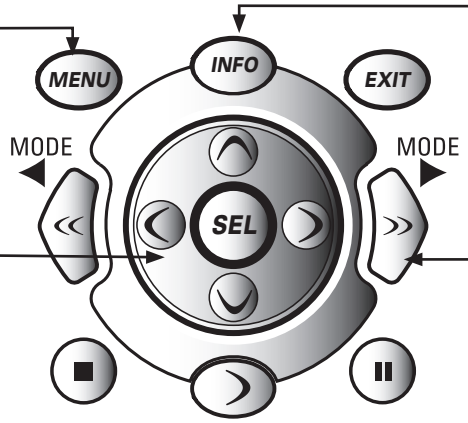
OSD Activation

The OSD is activated using the MENU button on the remote (with the remote set to operate the TGR-401).

The navigation buttons allow you to navigate through the OSD menus to control and customize many features of the TGR-401.

Press the EXIT button to quit the OSD at any time. Any changes you make will be saved.

Note that the TGR-401 front panel display shows the menu text when the OSD is activated.



Quick Information

Pressing the INFO button at any time will bring up a short description of the source you are listening to. For example if you are listening to a DVD, the TV display might show:

DVD VOL: 47.5
DOLBY DIGITAL

If the TGR-401 is set to play the MP3 input, and an optional VIA!migo dock is connected, press INFO to cycle through the artist (ART), album (ALB), title (TTL) and surround mode. When the surround mode is shown, use the MODE buttons to change the surround mode.

If the optional SIRIUS satellite radio kit is installed, press INFO to cycle through category (CAT>), artist (ART>), song title (TTL>), composer (CMP>) and the surround mode (stereo by default).

OSD Menus

Main Menu

The first menu of the TV On Screen Display looks like this:

MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

The next menus look like this:

TRIMS		CHOICES
FRONT	0	-20 TO +20
CENTER	0	-20 TO +20
SURROUND	0	-20 TO +20
BACK SURR	0	-20 TO +20
SUBWOOFER	0	-20 TO +20
RESET ON POWER UP	Y	Y,N

TONE CONTROLS		CHOICES
BASS	0	+14 TO -14
TREBLE	0	+14 TO -14

MODES		CHOICES
DTS SUB TRIM	0	-20 TO +20
DOLBY SUB TRIM	0	-20 TO +20
PANORAMA	OFF	OFF/ON
WIDTH	3	0 TO 7
DIMENSION	-3	-3 TO +3
DRC (DYNAMIC RANGE)	OFF	OFF/MIN/MAX
DOLBY HEADPHONE	OFF	ON/OFF
HEADPHONE TRIM	0	-20 TO +20

PRESETS	
AM/FM	→
SIRIUS	→

SETUP		CHOICES
INPUTS	→	
SPEAKERS	→	
VIDEO	→	
MAIN ZONE	→	
ZONE 2	→	
CONTROL	→	
DIGITAL OUT	THRU	DN MIX/THRU
DIMMER	MEDIUM	LOW/MEDIUM/HIGH

Trim menu

Adjust the volume of each speaker "on-the-fly."

Tone menu

Treble and Bass adjustment.

Modes menu

Adjust the settings of the surround modes, dynamic range and headphone trim

Presets menu

Assign tuner preset stations.

Settings menu

Input settings

Speakers size, position, calibration, and crossover

Main Zone and Zone 2 volume and power-up setting

Video and OSD settings

Software settings

IR and RS232 setup

Navigation

Use the remote's navigation pad left, right, up and down buttons to navigate through the menus.

An arrow after text (→) on the screen, shows there is more information on another page.

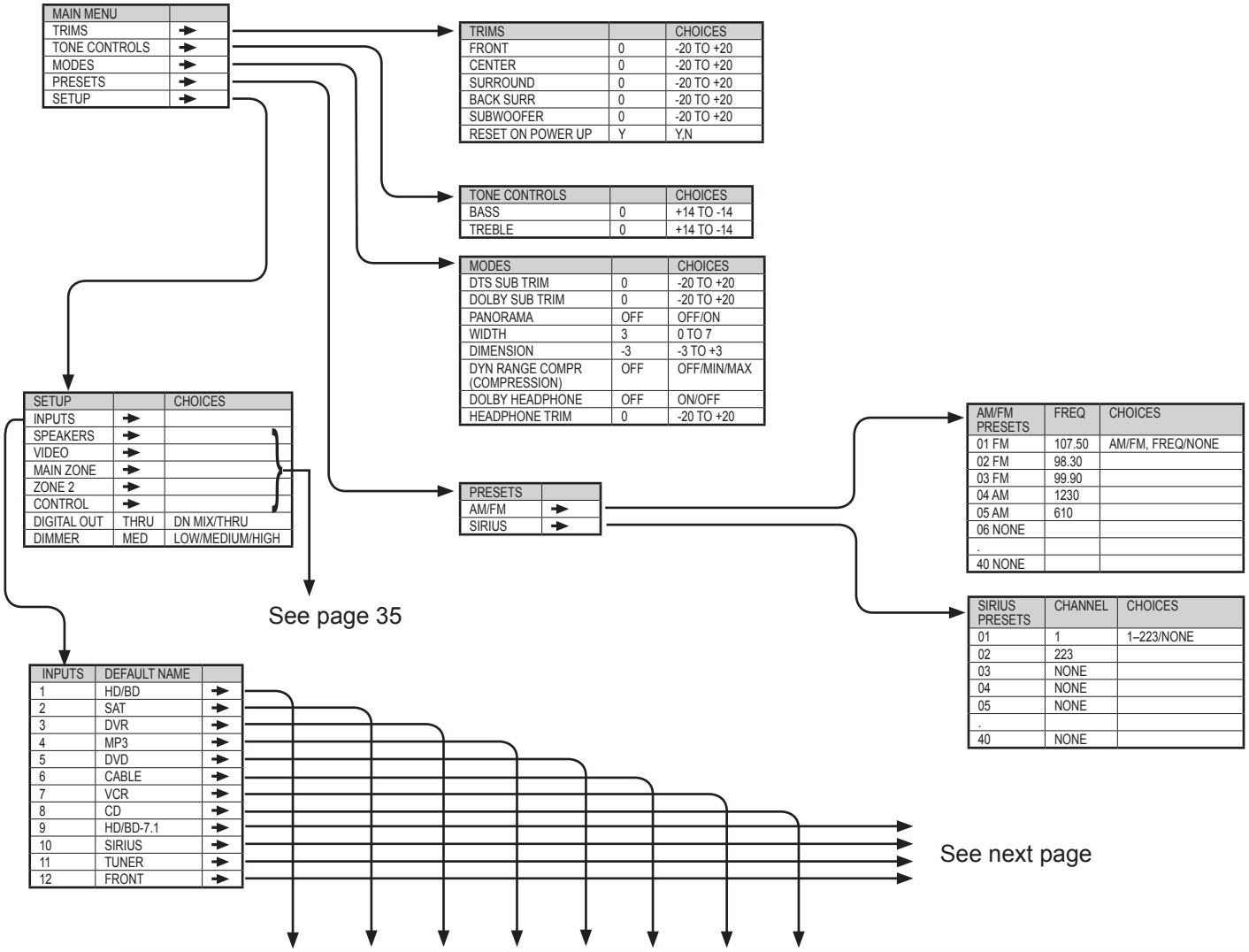
The back arrow (←) shows that you can return to the previous page.

NOTE: you can quit the OSD at any time by pressing EXIT on the remote. Any changes you make will be saved. There is no need to navigate back through previous pages, unless you want to make more changes.

Front Panel

From the front panel, you can navigate using the Setup and Enter buttons, and the Manual Selector. The front panel display shows the menus, two lines at a time.

OSD Menus: Trims, Tone, Modes, Presets, Setup (Input)



MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

TRIMS		CHOICES
FRONT	0	-20 TO +20
CENTER	0	-20 TO +20
SURROUND	0	-20 TO +20
BACK SURR	0	-20 TO +20
SUBWOOFER	0	-20 TO +20
RESET ON POWER UP	Y	Y,N

TONE CONTROLS		CHOICES
BASS	0	+14 TO -14
TREBLE	0	+14 TO -14

MODES		CHOICES
DTS SUB TRIM	0	-20 TO +20
DOLBY SUB TRIM	0	-20 TO +20
PANORAMA	OFF	OFF/ON
WIDTH	3	0 TO 7
DIMENSION	-3	-3 TO +3
DYN RANGE COMPR (COMPRESSION)	OFF	OFF/MIN/MAX
DOLBY HEADPHONE	OFF	ON/OFF
HEADPHONE TRIM	0	-20 TO +20

SETUP		CHOICES
INPUTS	→	
SPEAKERS	→	
VIDEO	→	
MAIN ZONE	→	
ZONE 2	→	
CONTROL	→	
DIGITAL OUT	THRU	DN MIX/THRU
DIMMER	MED	LOW/MEDIUM/HIGH

See page 35

PRESETS	
AM/FM	→
SIRIUS	→

AM/FM PRESETS	FREQ	CHOICES
01 FM	107.50	AM/FM, FREQ/NONE
02 FM	98.30	
03 FM	99.90	
04 AM	1230	
05 AM	610	
06 NONE		
.		
40 NONE		

SIRIUS PRESETS	CHANNEL	CHOICES
01	1	1–223/NONE
02	223	
03	NONE	
04	NONE	
05	NONE	
.		
40	NONE	

INPUTS	DEFAULT NAME	
1	HD/BD	→
2	SAT	→
3	DVR	→
4	MP3	→
5	DVD	→
6	CABLE	→
7	VCR	→
8	CD	→
9	HD/BD-7.1	→
10	SIRIUS	→
11	TUNER	→
12	FRONT	→

See next page

	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	INPUT 6	INPUT 7	INPUT 8	CHOICES
ZONES	M/Z2	M/Z2	M/Z2	M/Z2	M/Z2	M/Z2	M/Z2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
NAME	HD/BD	SAT	DVR	MP3	DVD	CABLE	VCR	CD	(UP TO 10 LETTER, NUMS AND SPECIAL CHARACTERS
GAIN TRIM	0.0 DB	0.0 DB	0.0 DB	0.0 DB	0.0 DB	0.0 DB	0.0 DB	0.0 DB	-20 TO + 20 DB
ANA AUDIO	1	2	3	4	N	N	3	4	N, 1, 2, 3, 4, 8 CH (N = NO ASSIGN)
DIGITAL	COAX1	COAX2	COAX3	COAX4	OPT1	OPT2	OPT3	OPT4	N, COAX 1-4, OPT 1-4
COMPOSITE	1	2	3	4	1	2	3	4	N, 1-4
S VIDEO	1	2	3	4	1	2	3	4	N, 1-4
COMPONENT VIDEO	1	2	3	N	1	2	3	N	N, 1-3
HDMI	1	2	3	N	1	2	3	N	N, 1-3
VIDEO DELAY	0 MS	0 MS	0 MS	0 MS	0 MS	0 MS	0 MS	0 MS	0-180 MS IN 5 MS STEPS
AUTODET ANA	N	N	N	N	N	N	N	N	N/Y
AUTODET DIG AUD	N	N	N	N	N	N	N	N	N/Y
AUTODET CV	N	N	N	N	N	N	N	N	N/Y
AUTODET SV	N	N	N	N	N	N	N	N	N/Y
AUTODET COMPON	N	N	N	N	N	N	N	N	N/Y
2-CH ANALOG	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB, SRC DIRECT
2-CH DIGITAL	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB,
DOLBY	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST, DIGITAL, DIGITAL EX, PLIIX MUSIC, PLIIX MOVIE
DTS	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST, DIGITAL SURROUND, NEO:6, SUNFIRE
DTS96	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST	LAST, DTS 96/24, NEO:6, SUNFIRE

See page 37 for more details of the input menu

OSD Menus: Setup, Inputs continued

MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

SETUP		CHOICES
INPUTS	→	
SPEAKERS	→	
VIDEO	→	
MAIN ZONE	→	
ZONE 2	→	
CONTROL	→	
DIGITAL OUT	THRU	DN MIX/THRU
DIMMER	MED	LOW/MEDIUM/HIGH

INPUTS	DEFAULT NAME	
1	HD/BD	→
2	SAT	→
3	DVR	→
4	MP3	→
5	DVD	→
6	CABLE	→
7	VCR	→
8	CD	→
9	HD/BD-7.1	→
10	SIRIUS	→
11	TUNER	→
12	FRONT	→

	INPUT 9	INPUT 10	INPUT 11	INPUT 12	CHOICES
ZONES	M/Z2	M/Z2	M/Z2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
NAME	HD/BD-7.1	SIRIUS (FIXED)	TUNER (FIXED)	FRONT (FIXED)	(UP TO 10 LETTER, NUMS AND SPECIAL CHARACTERS
GAIN TRIM	0.0 DB	0.0 DB	0.0 DB	0.0 DB	-20 TO + 20 DB
ANA AUDIO	8CH	SIRIUS (FIXED)	TUNER (FIXED)	FRONT (FIXED)	N, 1, 2, 3, 4, 8 CH (N = NO ASSIGN)
DIGITAL	N	N (FIXED)	N (FIXED)	FRONT (FIXED)	N, COAX 1-4, OPT 1-4
COMPOSITE	1	N	N	FRONT (FIXED)	N, 1-4
S VIDEO	1	N	N	FRONT (FIXED)	N, 1-4
COMPONENT VIDEO	1	N	N	FRONT (FIXED)	N, 1-3
HDMI	1	N	N	N (FIXED)	N, 1-3
VIDEO DELAY	0 MS	0 MS	0 MS	0 MS	0-180 MS IN 5 MS STEPS
AUTODET ANA	N	N	N	N	N/Y
AUTODET DIG AUD	N	N	N	N	N/Y
AUTODET CV	N	N	N	N	N/Y
AUTODET SV	N	N	N	N	N/Y
AUTODET COMPON	N	N	N	N	N/Y
2-CH ANALOG	LAST	LAST	LAST	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB, SRC DIRECT
2-CH DIGITAL	LAST	LAST (FIXED)	LAST (FIXED)	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB,
DOLBY	LAST	LAST (FIXED)	LAST (FIXED)	LAST	LAST, DIGITAL, DIGITAL EX, PLIIX MUSIC, PLIIX MOVIE
DTS	LAST	LAST (FIXED)	LAST (FIXED)	LAST	LAST, DIGITAL SURROUND, NEO:6, SUNFIRE
DTS96	LAST	LAST (FIXED)	LAST (FIXED)	LAST	LAST, DTS 96/24, NEO:6, SUNFIRE

(FIXED) MEANS THAT THE ITEM CANNOT BE CHANGED

See page 37 for more details of the input menu

OSD Menus: Setup continued

MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

SETUP		CHOICES
INPUTS	→	
SPEAKERS	→	
VIDEO	→	
MAIN ZONE	→	
ZONE 2	→	
CONTROL	→	
DIGITAL OUT	THRU	DNMX/THRU
DIMMER	MED	LOW/MED/HI

SPEAKERS	
AUTO SETUP	→
SPEAKER SIZE	→
DISTANCE	→
LEVEL CALIBRATION	→
EQ	→
BINDING POSTS	→

AUTO SETUP	
PLUG MIC INTO FRONT PANEL JACK AND SELECT "START" ***WARNING*** TEST TONE IS LOUD	
START	→

AUTO SETUP 2	
TESTING: POLARITY SPEAKER SIZE DISTANCE LEVEL CALIBRATION TEST TAKES 1 MINUTE	
CANCEL	→

AUTO SETUP 3	
TEST RESULTS ARE DISPLAYED: POLARITY SPEAKER SIZE DISTANCE SPEAKER TRIM	
ACCEPT	→
REJECT	→

VIDEO		CHOICES
OSD DURATION	2 SEC	0S, 2 S, 5 S
OSD LOCATION	BOTTOM	BOTTOM, TOP
VIDEO INTERLACE	ON	ON/OFF

SPEAKER SIZE		CHOICES
FRONT	90HZ	LARGE,40,45,50,55,60,65,...150
CENTER	90HZ	OFF, LARGE,40,45,50,55,60,65,...150
SURROUND	90HZ	OFF, LARGE,40,45,50,55,60,65,...150
BACK SURR	90HZ	OFF, LARGE,40,45,50,55,60,65,...150
NUM BACK SPKRS	2	N/A,1,2
SUBWOOFER	90HZ	OFF, 40,45,50,55,60,65,...150
SUBWOOFER MODE	NORM	NORMAL, ENHANCED

MAIN ZONE		CHOICES
PWR UP MAX VOL	100.0	0.0-100.0
PWR UP MIN VOL	0.0	0.0-100.0 MUST BE SMALLER THAN PWR UP MAX VOLUME
MAX VOLUME	100.0	0.0-100.0 MUST BE LARGER THAN PWR UP MAX VOLUME
PWR UP SOURCE	LAST	LAST, INPUT 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
AUTO ON	N	Y/N

DISTANCE	FT	CHOICES
FRONT LEFT	0.0	0.0 - 25.0 FEET (6 INCH STEPS), 0 - 7.5 METERS (0.15 METER STEPS)
CENTER	0.0	
FRONT RIGHT	0.0	
SURR RIGHT	0.0	
BACK SURR R	0.0	
BACK SURR L	0.0	
SURR LEFT	0.0	
SUB	0.0	
UNITS	FEET	FEET/ METERS

ZONE 2		CHOICES
FIXED VOLUME	NONE	NONE, 0.0 - 100.0
PWR UP MAX VOL	100.0	0.0 - 100.0
PWR UP MIN VOL	0.0	0.0-100.0 MUST BE LESS THAN POWER UP MAX VOLUME
MAX VOLUME	100.0	0.0-100.0 MUST BE MORE THAN POWER UP MAX VOLUME
PWR UP SOURCE	LAST	LAST, INPUT 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
BASS	0	+14 TO -14, 2 DB STEPS
TREBLE	0	+14 TO -14, 2 DB STEPS
BALANCE	0	-20 TO +20, 1 DB STEPS

LEVEL CALIBRATION	DB	CHOICES
FRONT LEFT	0	(-20 TO +20 IN 0.5 DB STEPS)
CENTER	0	
FRONT RIGHT	0	
SURR RIGHT	0	
BACK SURR R	0	
BACK SURR L	0	
SURR LEFT	0	
SUB	0	

CONTROL		CHOICES
RS232 BROADCAST	Y	Y, N
TRIGGERS	→	
FRONT IR SENSOR	NORM	NORMAL,NO RPT,OFF
SIRIUS RESET		
SETTINGS SAVE	→	
SOFTWARE VER.	X,Y,Z	FIRMWARE REVISION
EX VERSION	X,Y,Z	FLASH REVISION
BT VERSION	X,Y,Z	BOOTLOAD REVISION

EQ	
AUTO EQ	→
MANUAL GLOBAL	→
MANUAL PAIRS	→
EQ MODE	NONE, GLOBAL, PAIRS, AUTO

See next page

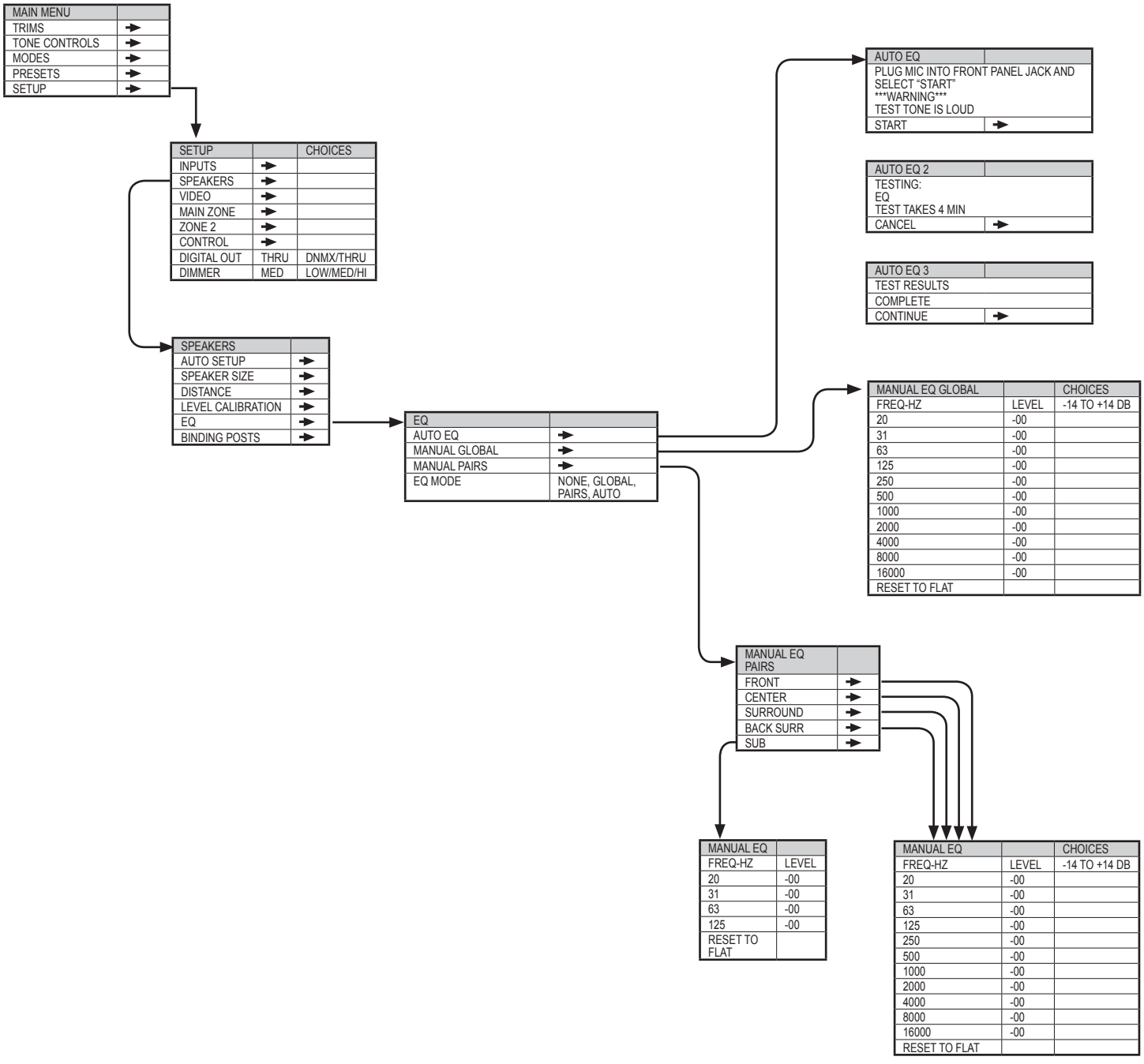
TRIGGERS	
TRIGGER OUTPUT 1	→
TRIGGER OUTPUT 2	→
TRIGGER OUTPUT 3	→

SETTINGS SAVE	PIN REQUIRED FOR ACCESS
SAVE DEALER	ENTER 4 CHARACTER PIN
RECALL DEALER	ENTER 4 CHARACTER PIN
RECALL FACTORY	ENTER 4 CHARACTER PIN

BINDING POSTS		CHOICES
AMP SECTION	ON	ON, OFF
FRONT	ON	ON, OFF
SURROUND	ON	ON, OFF
CFG POST	OFF	OFF, FRONT, SURR
POWERED Z2	OFF	ON/OFF

TRIGGER OUTPUT	1	2	3	CHOICES
DELAY TIME	1S	1S	1S	0 TO 5 SEC (1 SEC STEPS) THIS IS THE DELAY AFTER THE EVENT, BEFORE TRIGGER OCCURS
1 HD/BD	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
2 SAT	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
3 DVR	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
4 MP3	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
5 DVD	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
6 CABLE	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
7 VCR	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
8 CD	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
9 HD/BD-7.1	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
10 SIRIUS	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
11 TUNER	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
12 FRONT	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2

OSD Menus: Setup/Speakers/EQ



Using the TGR-401

Input settings

The Inputs OSD menu shown on page 33 and 34 allows you to set up each input individually. The table below shows input 1 in more detail. The first column shows the available options, the second column shows the default factory settings, the third shows the choices available, and the fourth shows some extra notes.

Note that inputs 10 (SIRIUS), 11 (Tuner) and 12 (Front) have some options that are fixed and cannot be changed.

Input 1 Example

	DEFAULT	CHOICES	NOTES
ZONES	M/Z2	OFF, MAIN, ZONE 2, M/Z2	Shows which Zones the input can play in
NAME	HD/BD	(UP TO 10 LETTER, NUMS AND SPECIAL CHARACTERS)	Change the name of the input to suit your actual components
GAIN TRIM	0.0 DB	-20 TO + 20 DB	Adjust the inputs so they all come on at about the same volume level
ANA AUDIO	1	N, 1, 2, 3, 4, 8 CH (N = NO ASSIGN)	Assign which analog input is used when this input is chosen
DIGITAL	COAX1	N, COAX 1-4, OPT 1-4	Assign which digital input is used when this input is chosen
COMPOSITE	1	N, 1-4	Assign which composite video input is used when this input is chosen
S VIDEO	1	N, 1-4	Assign which S-video input is used when this input is chosen
COMPONENT VIDEO	1	N, 1-3	Assign which component video input is used when this input is chosen
HDMI	1	N, 1-3	Assign which HDMI input is used when this input is chosen
VIDEO DELAY	0 MS	0-180 MS IN 5 MS STEPS	A delay adjustment of the audio signals relative to the video signals.
AUTODET ANA	N	N/Y	The input will come on automatically whenever an analog audio signal is detected (auto-detect)
AUTODET DIG AUD	N	N/Y	The input will come on automatically whenever a digital audio signal is detected (auto-detect)
AUTODET CV	N	N/Y	The input will come on automatically whenever a composite video signal is detected (auto-detect)
AUTODET SV	N	N/Y	The input will come on automatically whenever an S-Video signal is detected (auto-detect)
AUTODET COMPON	N	N/Y	The input will come on automatically whenever a component video signal is detected (auto-detect)
2-CH ANALOG	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB, SRC DIRECT	Choose the mode that comes on when a 2-channel analog source is playing
2-CH DIGITAL	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB,	Choose the mode that comes on when a 2-channel digital source is playing
DOLBY	LAST	LAST, DIGITAL, DIGITAL EX, PLIIX MUSIC, PLIIX MOVIE	Choose the mode that comes on when a Dolby multi-channel source is playing
DTS	LAST	LAST, DIGITAL SURROUND, NEO:6, SUNFIRE	Choose the mode that comes on when a DTS multi-channel source is playing
DTS96	LAST	LAST, DTS 96/24, NEO:6, SUNFIRE	Choose the mode that comes on when a DTS 96/24 multi-channel source is playing

Bass Management

The TGR-401 has a bass management system that allows you to choose whether your speakers will play the full frequency range, or if the bass will be redirected to the subwoofer.

The advantages of redirecting the bass to a subwoofer are :

- The overall bass of the system is improved as subwoofers, such as Sunfire's powered True Subwoofers, are specially designed for this frequency range.
- The subwoofer can simultaneously play the bass from all of the speakers, in addition to its own low frequency effects channel (LFE).
- There is no loss in perception of the position of movie or music sound effects, as the ear cannot easily locate the position of bass sound sources.
- Smaller speakers can be used for front, center and surrounds, as they do not have to reproduce the low frequency range. This leads to a saving in speaker expense and room space. Note that a subwoofer is required if the front speakers are not set to LARGE.
- The TGR-401 amplifiers do not waste power reproducing the low frequency range.

The SPEAKER SIZE menu is used to set the bass management correctly for your speaker system.

SPEAKER SIZE		CHOICES
FRONT	90HZ	LARGE,40,45,50,55,60,65,...150
CENTER	90HZ	OFF, LARGE,40,45,50,55,60,65,...150
SURROUND	90HZ	OFF, LARGE,40,45,50,55,60,65,...150
BACK SURR	90HZ	OFF, LARGE,40,45,50,55,60,65,...150
NUM BACK SPKRS	2	N/A,1,2
SUBWOOFER	90HZ	OFF, 40,45,50,55,60,65,...150
SUBWOOFER MODE	NORM	NORMAL, ENHANCED

The speaker choices are:

OFF: The speakers are not present.

LARGE: the speakers receive the full frequency range, and their bass is not redirected to the subwoofer.

40, 45, 50...150 Hz: The bass below this frequency is redirected to the subwoofer. Check your speaker manuals to find their frequency response, and choose a frequency that is above the lowest, or choose 90 Hz as a good starting point.

NOTE: Dolby Digital and DTS modes are designed especially for complete systems with front, center, and surround speakers and subwoofers. You need all of the speakers to get the best performance from your Home Theater. If you do not have a subwoofer connected and you are using large speakers, then you should not use the bass management system (so set all the speakers to Large). Without a subwoofer, you will be missing the 5.1 LFE (low frequency effects) information.

Considering the advantages of the bass management system, you might try setting all of your speakers to 90 Hz (for example), even if they are capable of good low-frequency performance.

Video Conversion

The TGR-401 has advanced digital video DSP circuitry and coding which allows the following:

- Up conversion from composite video inputs to S-video and component video outputs.
- Up conversion from S-video inputs to component video outputs.
- Down conversion from S-video inputs to the MON composite video output jack.

The video conversion makes the TGR-401 able to switch all of your video sources, making it the central controller for all of your audio and video entertainment.

For example, suppose you have your TV connected to the component video outputs of the TGR-401. Any of your other video sources can be connected to the TGR-401, even those which do not have component video. The TGR-401 will convert any composite and S-video sources to component video.

Notes:

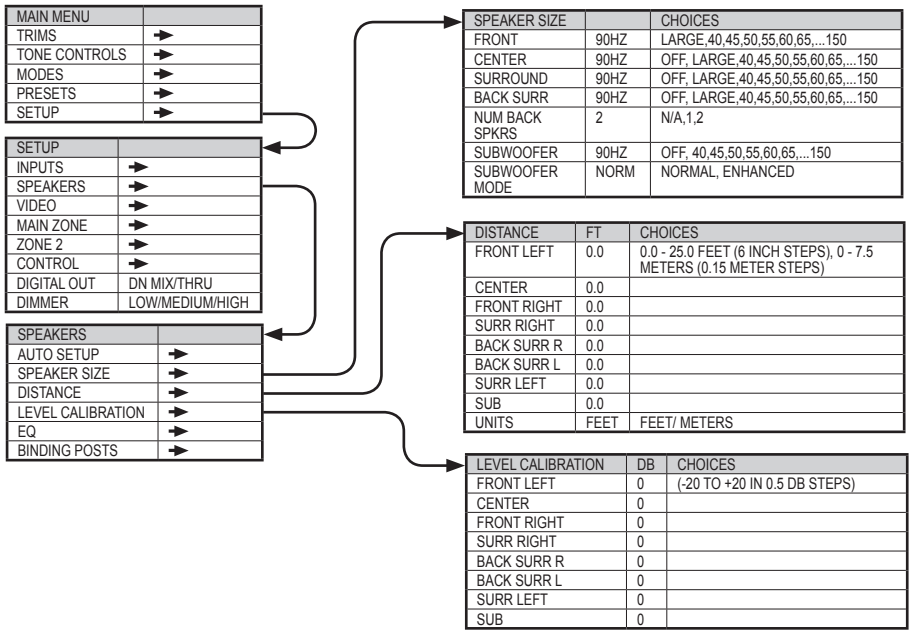
- Do not connect both composite and S-video inputs on the same TGR-401 input. Always connect the highest quality video source type.
- The quality of the converted output is limited by the quality of the original source.
- The TGR-401 has sophisticated video circuitry that requires it to be pre-configured for only one type of television broadcast standard. For US models, this is NTSC and for export models, this is PAL-BGIH.

Manual Setup

The following On Screen Display (OSD) menus are used to enter and make three main adjustments:

- Speaker Size
- Level Calibration
- Speaker Distance

This setup needs to be done when you use your system for the first time, or if you change anything such as the amplifiers or speakers, or the speaker position. The calibration is also a good way to check that your system is working correctly. These adjustments are made using the OSD as follows:



1. With the remote control set to operate the TGR-401, press the MENU button to bring up the MAIN Menu of the OSD on your TV.

2. Use the navigation pad left, right, up and down buttons to navigate through the menus in the next steps.

   NOTE: Quit the OSD at any time by pressing the nearby EXIT button. Any changes will be saved. There is no need to navigate back through previous pages, unless you want to make more changes.

   The TGR-401 front panel display shows the same messages as the OSD.

3. In the MAIN Menu, select SETUP, and from there select the SPEAKERS Menu.

4. In the SPEAKERS Menu, select the SPEAKER SIZE Menu. Use the navigation pad to set the size of each speaker to Large, or set to OFF for those speakers which are not present. For speakers with the bass redirected to the subwoofer, set to 90 Hz. This is a good starting point. Return to the SPEAKERS Menu when you are finished.

5. In the SPEAKERS Menu, select the DISTANCE Menu. Enter how far each speaker is from your listening position. (Measure the distance with a tape measure.)

6. Turn down the main volume before you begin the level calibration, or it can be loud. In the SPEAKERS Menu, select the LEVEL CALIBRATION Menu to adjust the output of each speaker. A test noise plays in each selected speaker. Use the remote's volume buttons to increase the starting volume to a comfortable level, then use the remote's navigation buttons to adjust the level of each speaker in turn, until they are all playing at the same level. Return to the SPEAKERS Menu when you are finished.

7. Press the remote's EXIT button to quit the OSD. Now the TGR-401 is setup correctly and ready for action.

Automatic Setup Procedure

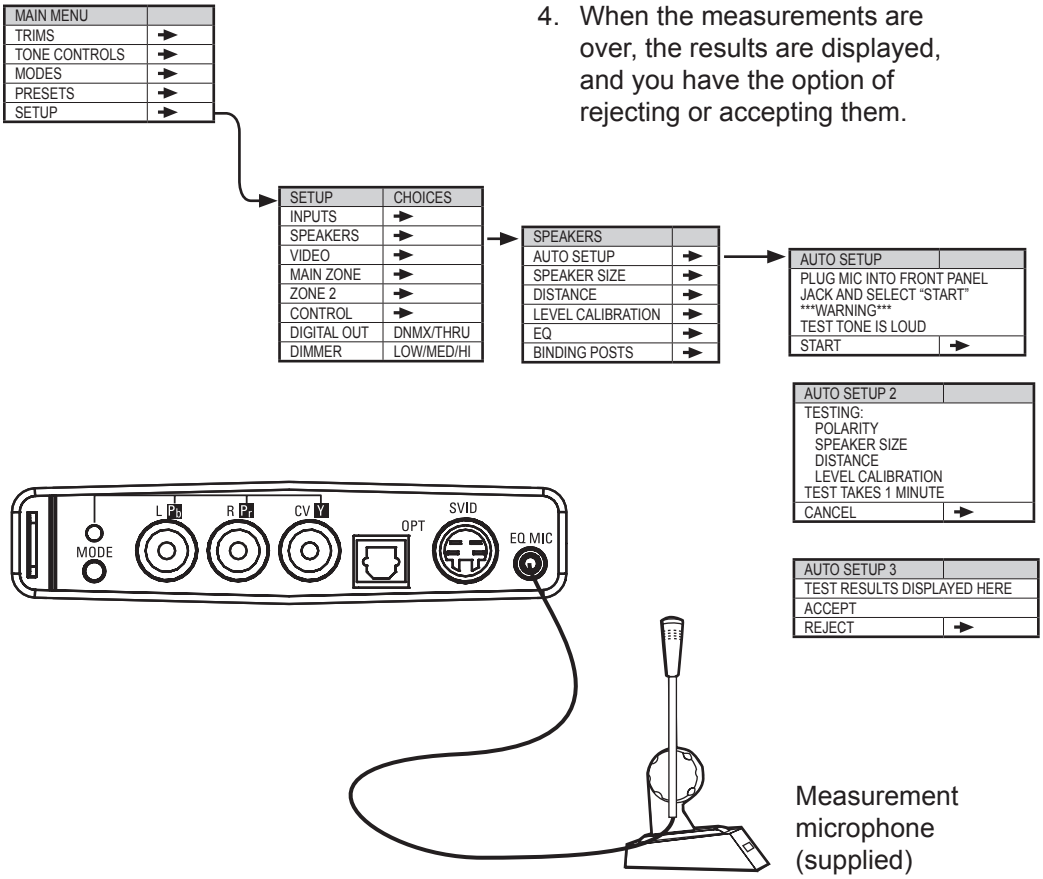
The automatic setup procedure uses the microphone to measure and evaluate your system. After the measurements are complete, the levels, crossover frequency, and delay times of the speakers in your system are automatically adjusted for the best performance. Any problems with the speakers in your system are indicated, for example, if there is no output from a speaker, or if the polarity is reversed.

Warning: The test procedure can emit LOUD test tones through your speakers.

The procedure should be done in a quiet environment, so only the test tones will be picked up by the microphone. Use only the microphone supplied.

1. Place the measurement microphone on the back of your favorite listening couch or chair. Try to place it at head height if possible, in the position where your head normally is while listening to your home theater. The microphone should point straight up towards the ceiling, so it has an omni-directional response for highest accuracy.
2. Connect the microphone to the Mic input behind the sliding front panel of the TGR-401.
3. With the remote control set to operate the TGR-401, press the MENU button to enter the OSD main menu. Use the remote's navigation buttons to reach the Auto Setup menu. The testing procedure will start when you press the right navigation button.
4. When the measurements are over, the results are displayed, and you have the option of rejecting or accepting them.
5. If you accept the results, the adjustments to the level, crossover frequency, and delay are saved and applied to your system.

- If some of the measurements are labeled "bad," try moving the microphone to a new position about six inches away, and repeat the auto setup.
- If the measurements indicate that a speaker has reversed polarity, check the speaker cable connections and correct this problem. The positive output of the TGR-401 must connect to the positive input of the loudspeaker, and the negative output must connect to the negative input of the speaker.
- For larger rooms, or rooms with multiple seating positions, it is best to repeat the measurements several times, with the microphone in different positions within 6 inches of each other. Write down the results of each test, and for the final test, choose the location that gives results closest to the average seen across all locations. This reduces the chance of choosing a poor location that happens to be in a room node.



Measurement microphone (supplied)

Automatic and Manual Equalization

Auto EQ

The automatic EQ procedure uses the microphone to measure and evaluate your system. This takes into account room effects, and automatically flattens out the response. After the measurements are complete, the EQ of your system is adjusted. The procedure does not use any previously measured information from the auto setup, or user-entered information.

Warning: The test procedure can emit LOUD test tones through your speakers.

The procedure should be done in a quiet environment, so only the test tones will be picked up by the microphone. Use only the microphone supplied.

1. Place the measurement microphone on the back of your favorite listening couch or chair. Try to place it at head height if possible, in the position where your head normally is while listening to your home theater. The microphone should point straight up towards the ceiling, so it has an omni-directional response for highest accuracy.
2. Connect the microphone to the Mic input behind the sliding front panel of the TGR-401.
3. In the EQ menu, select Auto EQ and the measurements will begin. The test tones will be played and the measurements taken. The procedure takes approximately four minutes. The EQ of each speaker pair will be adjusted for the best response. Auto EQ uses a complex DSP analysis of your room to create dynamic EQ filters. Therefore, detailed results of this process are not displayed.

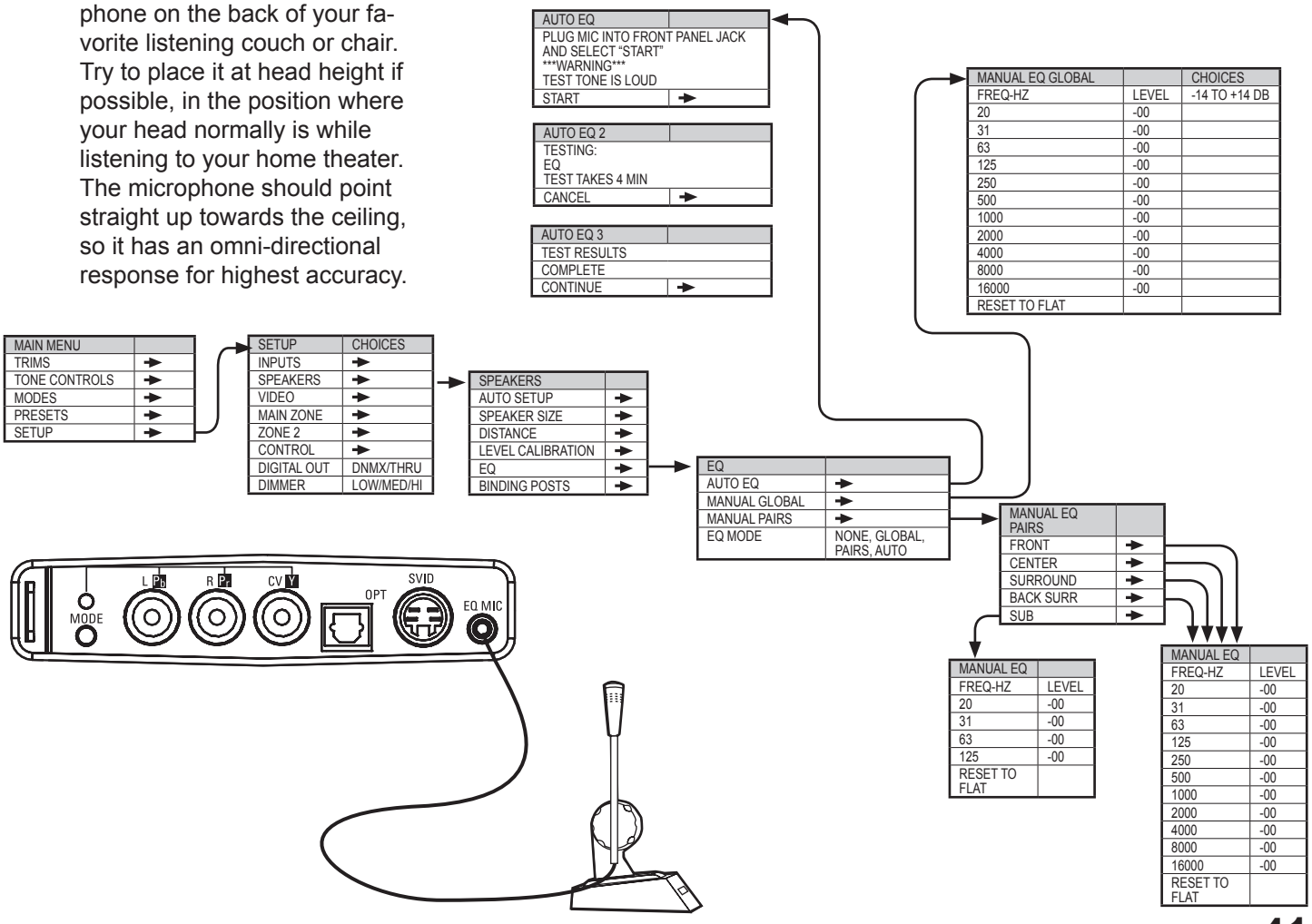
Manual EQ adjustment

The EQ of your system can also be adjusted manually, using your ears and preferences instead of the measurement microphone. There is 14 dB of cut and boost available at 11 frequencies, except for the subwoofer.

In the EQ menu, you can select Manual EQ Global, or Manual EQ Pairs.

"Manual EQ Global" allows you to adjust the EQ of the combined speaker system. Use the menu to choose the frequencies and make the adjustments with the remote, to suit your preference.

"Manual EQ Pairs" allows you to adjust the EQ of the front pair, center, surround pair, surround back pair and sub.



Surround Modes for 2-Channel Sources

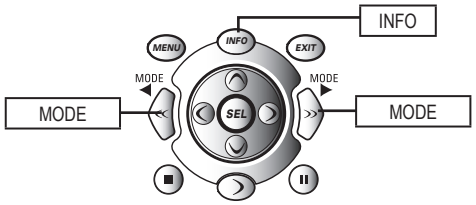
For 2 channel input sources, you can choose from the following modes:

STEREO
MONO
PARTY
DOLBY PLIIX MUSIC
DOLBY PLIIX MOVIE
DOLBY PLIIX GAME
DOLBY PLIIX MATRIX
DTS NEO:6 MUSIC
DTS NEO:6 CINEMA
JAZZ CLUB
SOURCE DIRECT

Mode Selection

With the remote set to control the TGR-401, press the INFO button until the present mode is displayed. (It may take a few presses until the mode is displayed, depending on the TGR-401 input you are listening to, such as MP3, FM, or AM.)

The mode for 2-channel input sources can then be changed using the remote's MODE buttons.



STEREO

This is the conventional two-channel stereo mode with sound from your left and right speakers. The TGR-401 bass management lets you use your subwoofer to handle the lower frequency range.

We recommend that you try Sonic Holography when using stereo sources.

MONO

This mode blends the left to right, and right to left. You can use it on noisy tuner sources or old recordings to reduce noise.

PARTY

This extra stereo mode copies the front speaker signals to the other speakers in your system. This mode adds tremendous presence to your stereo sources and is great for parties and casual listening alike.

DOLBY PRO LOGIC IIx

These modes allows you to enjoy many of the benefits of Dolby Digital (and Dolby Digital EX) from your stereo sources.

Try **MUSIC** mode for all of your stereo programs, and adjust these extra options in the MODES menu to suit your taste:

Width spreads the center channel across the front soundstage.

Panorama wraps the left and right channels around you.

Dimension adjusts the front/rear balance.

MODES		CHOICES
DTS SUB TRIM	0	-20 TO +20
DOLBY SUB TRIM	0	-20 TO +20
PANORAMA	OFF	OFF/ON
WIDTH	3	0 TO 7
DIMENSION	-3	-3 TO +3
DYN RANGE COMPR (COMPRESSION)	OFF	OFF/MIN/MAX
DOLBY HEADPHONE	OFF	ON/OFF
HEADPHONE TRIM	0	-20 TO +20

In **MOVIE** mode, Dolby Surround soundtracks are decoded by the TGR-401 into separate channels: left and right channels for off-screen imaging, a center channel for most on-screen dialog, and stereo surround channels for ambience and special effects. This is the mode to use for any surround-encoded material.

GAME mode is an excellent choice for playing video games encoded with Dolby Surround or Dolby Pro Logic II technology. The bass management is augmented to fully capture the impact of special effects panned to the surround channels.

MATRIX mode can be used for mono sources, or for FM programs with poor stereo reception.

DTS Neo:6

The **MUSIC** option can expand normal stereo programs into six channels. It does so in a natural sounding way, which enhances the listening experience.

The **CINEMA** option can produce up to six full range, separate channels and a subwoofer output from stereo matrix surround sources. This enhances the playback of sources such as surround sound video tapes, Laser Discs and broadcast TV programs.

JAZZ CLUB

In this DSP mode, the surrounds simulate the ambiance caused by rear reflections and effects of a small to medium sized venue. This is useful for adding surround sound effects to stereo sources. The ambiance effect can be varied using the OSD MODES menu.

SOURCE DIRECT

This mode bypasses all DSP, Tone, and bass management circuits. It is stereo analog only, and offers the shortest signal path through the TGR-401. Only the front left and right speakers are engaged. Do not use this mode for digital-only sources, as it only routes the analog audio. To prevent damage to your speakers, this mode only works if your front speakers are set to Large.

SONIC HOLOGRAPHY

Sonic Holography works on top of any 2 channel or multi-channel DSP mode, enhancing realism and depth.

Surround Modes for Multi-Channel Sources

For multi-channel sources, the TGR-401 will automatically select the correct mode from one of the following:

DOLBY DIGITAL
DOLBY DIGITAL EX
DOLBY DIGITAL PLIIX MUSIC
DOLBY DIGITAL PLIIX MOVIE
DTS DIGITAL SURROUND
DTS NEO:6
DTS SUNFIRE
DTS-ES MATRIX
DTS-ES DISCRETE
DTS 96/24
DTS 96/24 NEO:6
DTS 96/24 SUNFIRE
DTS-ES 96/24 MATRIX
DTS-ES 96/24 DISCRETE

Dolby Digital and DTS are “5.1” surround systems with five main channels: left front, center, right front, left surround, and right surround. Each channel can play the full frequency range and is independent of the other channels. The “.1” denotes the subwoofer channel which plays the low frequency effects (LFE), also independent of the other channels.

Dolby Digital EX and DTS ES offer "Extended Surround." Both systems offer a surround back channel which effectively fills in the otherwise empty soundspace behind you.

If you want to try one of the modes on the previous page, you should select a 2-channel output from your DVD player's options menu.

NOTE: In your DVD player's audio setup menu, set the digital output to **BITSTREAM**. If this is not set correctly, the TGR-401 cannot decode the digital information.

DOLBY DIGITAL

This mode is available if the TGR-401 automatically detects a Dolby Digital encoded source on the currently selected input. You should look for the Dolby Digital Logo on DVDs, LaserDiscs and other sources.

Many DVDs have the option of a Dolby Surround, Dolby Digital or Stereo soundtrack. Follow the instructions in your DVD player's manual to output Dolby Digital bitstreams. Dolby Digital must often be selected from the Disc's menu.

DOLBY DIGITAL EX

Dolby Digital EX mode is primarily for playback of Dolby Digital Surround EX encoded soundtracks. One advantage over Dolby Digital playback is that it fills in the area behind you with a completely separate full-range channel.

The TGR-401 has the option of connecting one or two surround back speakers. The calibration and speaker size options can create a seamless surround field.

If you have no surround back speakers, the extra information is sent to the standard surrounds and no material is lost. (Set the surround back speakers to OFF in the SPEAKER SIZE menu).

The TGR-401 will also create the surround back channel if you are playing a 5.1 source.

DOLBY DIGITAL with PRO LOGIC IIx

Besides Dolby Digital and Dolby EX, you may change the Mode to Dolby Pro Logic IIx Music or Dolby Pro Logic IIx Movie. These modes create enhanced stereo surround backs. Listen to each Mode to find which sounds best.

Dolby Digital uses a maximum of 5.1 channels and does not support surround back channels. Dolby EX supports a **mono** surround back channel (or **dual-mono** surround back channels if both left and right surround backs are used). Dolby Pro Logic IIx is not an optional mode when the surround back channel is configured for only one speaker.

Dolby Digital plus Pro Logic IIx Movie or Music uses the Dolby Pro Logic IIx decoder to create a **stereo** surround back soundfield from the stereo content of the left and right surrounds. For example, Dolby Pro Logic IIx Movie directs or "steers" some of the left surround signal to the left surround back, whereas Dolby Pro Logic IIx Music lets the left surround remain intact and fills in the left surround back with additional material.

Although movies are encoded with either Dolby Digital or Dolby EX, many sound even better when using the Dolby Pro Logic IIx modes.

DTS DIGITAL SURROUND

This mode is available if the TGR-401 automatically detects that a DTS encoded source is present at one of it's digital inputs. Look for the DTS Logo on DVDs, LaserDiscs, CDs and other sources.

Make sure that you set your player to output DTS bitstreams. DTS must also be selected on the disc's menu.

NOTE: Besides DTS Digital Surround, you can press the Mode keys on the remote or use the Mode selector on the front panel and play DTS Digital Surround with Pro Logic IIx Music processing to create stereo surround back channels. Pressing either Mode key again will return you to standard DTS Digital Surround playback.

DTS-ES MATRIX/DISCRETE

All DTS-ES sources have the surround back channel matrixed in the left and right surrounds. Newer DVD releases also have a discrete surround back channel, in addition to the same information matrixed.

DISCRETE ES sources: the TGR-401 DTS-ES discrete decoder will decode the discrete surround back channel. It also removes the surround back matrix from the left and right surrounds, and restores them to be fully independent channels.

MATRIX ES sources: If there is no discrete surround back channel, the TGR-401 decodes the matrixed surround back channel from the left and right surrounds, and restores them to be fully independent channels.

DTS NEO:6

This matrixed mode extend DTS Digital Surround to support surround back channels, similar to how PLIIX modes work for Dolby 5.1. The back channels are derived from the left and right surrounds.

DTS SUNFIRE

This is a special mode that copies the surround channels into the back speakers. This provides a more enveloping experience for playback of DTS 5.1 digital sources – especially music and concert material.

DTS 96/24 modes

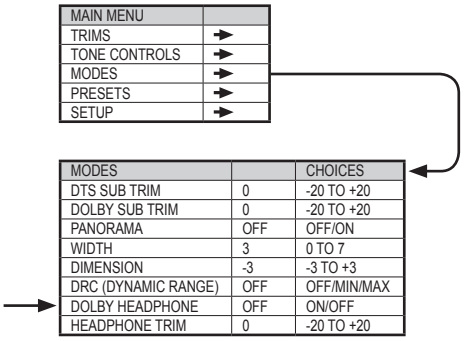
The DTS 96/24 modes allow the decoding of multi-channel, 96 kHz, 24-bit, digital audio. The various DTS 96/24 modes share the same features as described for the standard DTS modes.

DOLBY HEADPHONE

Dolby Headphone technology enables you to experience the surround effects of a five-channel, six-channel, or seven-channel soundtrack through your headphones.

Since headphones directly project sound into the ear, many of the spatial cues that exist when using speakers are lost. This can result in the audio sounding like it is inside your head, versus surrounding you. Dolby Headphone uses DSP technology to simulate up to seven surround speakers around the virtual room for a much more enveloping experience.

Dolby Headphone can be turned on or off in the MODES menu. Try turning it on for different sources and listen for the improved sense of surrounding sound. It will sound best for multichannel sources, and can be used to good effect for 2 channel music. Turn it off where the effect is not required.



MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

MODES		CHOICES
DTS SUB TRIM	0	-20 TO +20
DOLBY SUB TRIM	0	-20 TO +20
PANORAMA	OFF	OFF/ON
WIDTH	3	0 TO 7
DIMENSION	-3	-3 TO +3
DRC (DYNAMIC RANGE)	OFF	OFF/MIN/MAX
DOLBY HEADPHONE	OFF	ON/OFF
HEADPHONE TRIM	0	-20 TO +20

Sonic Holography

Sonic Holography is a unique process which enhances the three-dimensional effects and realism of stereo sound. This is from a design based on Bob Carver's legendary (and much sought after) Carver C-9 Sonic Holography Generator.

This circuit was designed to overcome a problem in obtaining accurate sound reproduction:

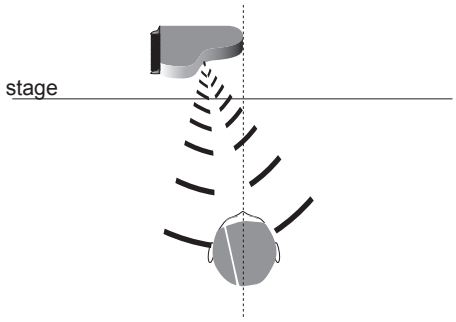
In a stereo system, both ears will hear the output from both speakers. The left ear hears sound from the left speaker and from the right speaker. To see a problem with this, compare what happens when listening to a live musical performance:

During a concert, each ear will receive one direct sound arrival. For example, both ears will hear the piano playing, and your brain tells you accurately the position of the musician. In a stereo recording of the concert, this piano will be heard from both speakers. The left ear will hear the left speaker, which is fine, but the left ear will also hear the crash from the right speaker. These extra sounds tend to confuse the sense of sound source location.

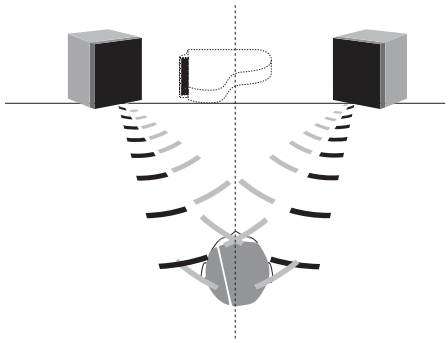
The stereo effect in a good pair of headphones is enhanced because the left ear only hears the left headphone, and the right ear hears only the right headphone. There are no extra sound arrivals.

To summarize :

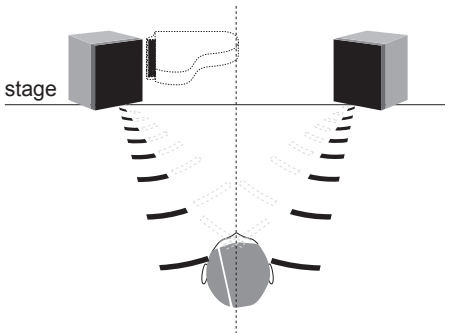
1. A real musical event will create only two direct sound arrivals, one at the left ear and one at the right. We can accurately judge the depth and positioning of the piano on stage.



2. Stereo playback will give four arrivals, as both speakers are heard by each ear. These second sound arrivals reduce our naturally accurate sense of positioning.



3. Sonic Holography cancels out the unwanted second arrivals. The left ear mainly hears the left speaker and the right ear mainly hears the right speaker. The depth and positioning cues are restored.



Sonic Holography is accomplished by sending a complex crosstalk signal from the left and right speakers in addition to the normal program. These extra signals are virtually identical to the unwanted second sound arrivals but they are out-of-phase with them and they cancel each other out.

The result is a more three-dimensional and wider soundstage, where the positioning clues are restored. In a way, the musicians have been freed from the confines of the flat plane between the speakers. You will perceive them as playing forward or playing behind the speakers or to one side or the other, not just somewhere in between. We recommend that you experiment with its effect, remember that you are listening for a more accurate sense of the location of the different musicians.

Because Sonic Holography works by phase cancellation of the unwanted second sound arrivals, accurate speaker positioning is required. Make sure that the left speaker is the same distance away from you as the right speaker. Follow the front speaker placement on page 46 to get the best results. This is the same as any standard stereo system, only with more care taken to position the left and right speakers accurately.

Sonic Holography is engaged using the remote control or from the front panel. There is a short mute period until the circuit is fully engaged or disengaged.

1. Press the remote's MAIN button a few times to reach the main menu.
2. Press TG401 to set the remote to operate the TGR-401.
3. Press PAGE twice to reach page 3.

   HOL ON and OFF allow you to turn the Holography on or off.

FM and AM Tuner Operation

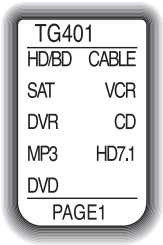
The supplied AM and FM antennas must be connected to the TGR-401 antenna terminals, or no stations will be tuned.

The internal AM and FM tuners are selected either by pressing Input and rotating the manual selector on the front panel, or by touching the AM or FM buttons in the remote's TGR-401 page 2. The front panel display will change to show the frequency of the last station you were listening to.

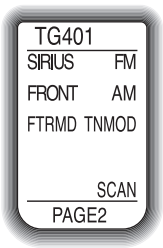
The FM tuner can tune stations from 87.5 MHz to 108.0 MHz in 0.2 MHz steps (.05 MHz steps for some international models). The AM tuner range is 530 kHz to 1710 kHz in 10 kHz steps (531 kHz to 1710 kHz in 9 kHz steps for some international models).

1. Press the remote's MAIN button to make sure the display is on the main display menu.

2. Press the TG401 device button to set the remote to operate your TGR-401. The display changes to show the TGR-401 input selections.

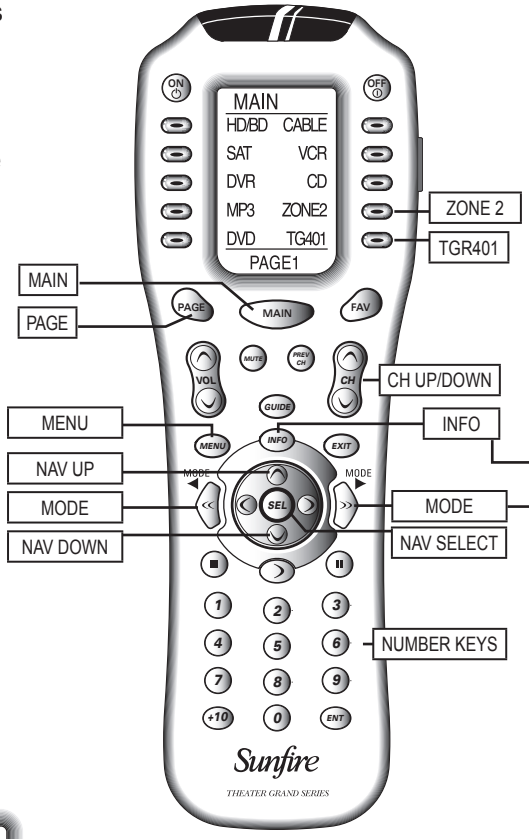


3. Press PAGE to reach page 2. This allows selection of the SIRIUS tuner, FM and AM tuner, TNMOD and SCAN.



TNMOD lets you use the number keys either to enter the station frequency directly, or to enter the preset station number. TNMOD is also available in Zone 2.

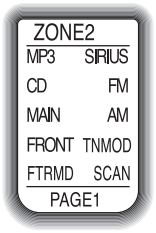
SCAN lets you scan up to the next tunable station. It will remain there for 5 seconds before scanning up to the next station. Press the Navigation SEL button to select a the currently-playing station.



4. Various remote buttons also operate the AM and FM tuner:

- NAVIGATION KEYPAD - multifunctional for setup menu navigation and AM/FM tuning.
- NAV UP - Tunes up one frequency step at a time. If you hold it down, it will scan up to the next station.
- NAV DOWN - Tunes down one frequency step at a time. If you hold it down, it will scan down to the next available station.
- NAV SELECT - Select a station.
- INFO - Show the current station frequency and preset number, or the listening mode.
- MENU - Enter the OSD Setup menu where FM and AM presets can be configured.
- CH UP/DOWN - Tunes up and down through preset list. The list is created in the preset menu within the setup menu.
- NUMBER KEYS - These allow you to enter the actual frequency of the station directly. If you press TNMOD, you can enter station preset numbers instead.

5. To operate FM/AM in Zone 2, select the Zone 2 button, then Zone 2's first page will show the FM/AM input selectors.

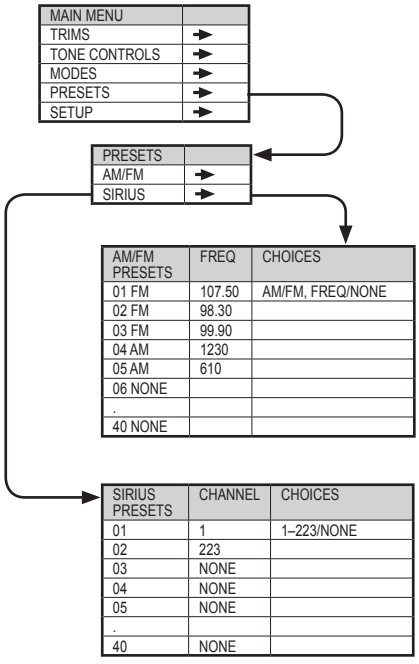


Changing Modes

1. Press the INFO button until the front panel display shows the current surround mode. Then use the mode buttons to select a mode.

Saving Presets

The OSD preset menu is used to enter the preset number and frequency of your favorite radio stations.



1. In the AM/FM preset menu, press the remote's center navigation select (SEL) to choose AM or FM, or reset a preset to NONE.

2. Use the navigation up or down to move to the preset number, for example, preset 01.

Recording

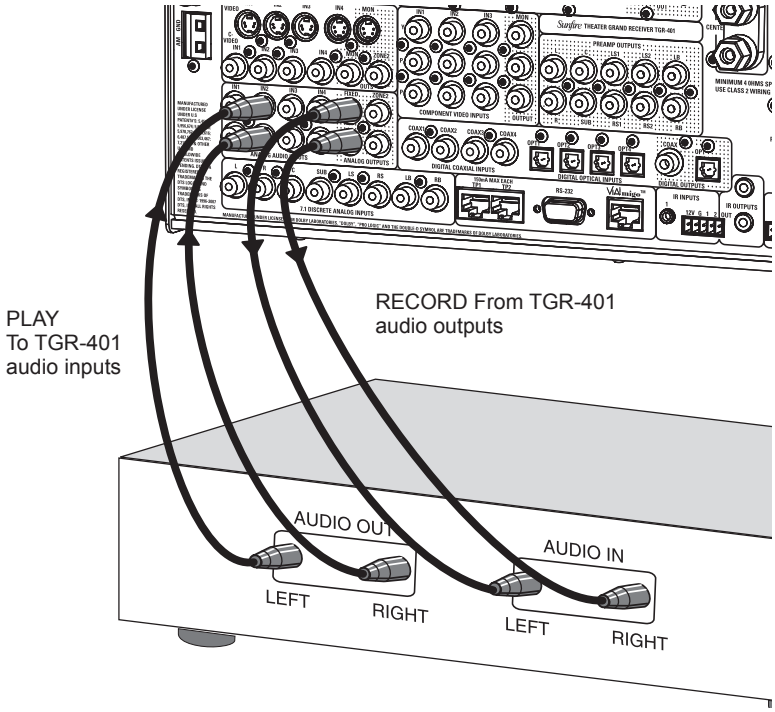
3. Use the navigation left and right buttons to move up and down the frequency band until the desired station is found. Each press of a button will increment the frequency one step at a time, or hold down a button to move along quickly.
4. Use the navigation up or down buttons to move to the next preset number, or press EXIT if you are finished.

Once preset stations have been setup, you can also program them as FAV buttons on the remote control, allowing easy recall (see page 27).

Recording to a Tape Player

Input signals from an audio source playing in the TGR-401 can be recorded using the left and right audio outputs. The tape player will receive a straight copy of the analog source signal going in, unaffected by the volume, tone or any surround modes. If you are playing a digital source, the tape player will receive a downmixed stereo analog signal for recording.

- Turn OFF the automatic mode. This is because some tape decks, such as three-head decks, will have an output signal going into the TGR-401 during recording, and this may be incorrectly selected as an input, rather than the source you are trying to record.
- Manually select the source such as CD and play it through your system.
- Set your tape player to record and adjust the input levels for the best performance. Once the levels are correct, you can reset your source to the beginning and make your recording.
- Do not select another Main Zone input while you are recording.



Zone 2 Operation

If you have a pair of speakers in a second room or area (Zone 2), they can play a stereo source independent of whatever is playing in the Home Theater room (Main Zone). You can also play the same source as selected in the Main Zone.

The Zone 2 speakers can be powered by two of the TGR-401's internal amplifiers, if you enable "Powered Z2" in the Binding Posts menu. The amplifiers that power the surround-back speakers are switched to play the Zone 2 speakers instead. An external power amplifier can be used to power the Zone 2 speakers.

Zone 2 plays stereo sources, and is unaffected by the DSP, Sonic Holography, surround modes or bass management.

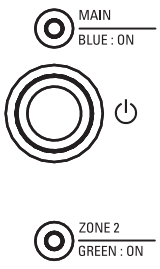
Connections

The connections for Zone 2 are shown on page 23.

Note: Zone 2 can play analog sources independent of what is playing in the Main Zone. It **cannot** play from a digital-only source unless that input is selected and playing in the Main Zone. To play a source such as a DVD player in Zone 2 independent of the Main Zone, make sure you connect the player's L-R analog audio output to the TGR-401.

Indicators

The front panel has a green LED to show the Zone 2 status. This LED is always on when Zone 2 is on. If it is off, there will be no output to Zone 2.



Turning on Zone 2

With the remote set to operate the TGR-401, press the ZONE 2 button. The remote's POWER, VOLUME and MUTE buttons then work for Zone 2.

Note: Zone 2 can also be turned on and adjusted without using the remote. Press the Zone 2 button on the TGR-401 front panel followed by Power to turn it on (or off), or adjust the input source or volume. After 8 seconds of inactivity, the front panel will revert back to control of the Main Zone.

Zone 2 operations will work even if the Main Zone is off.

MAIN MENU	
TRIMS	→
TONE CONTROLS	→
MODES	→
PRESETS	→
SETUP	→

SETUP	CHOICES
INPUTS	→
SPEAKERS	→
VIDEO	→
MAIN ZONE	→
ZONE 2	→
CONTROL	→
DIGITAL OUT	DNMX/THRU
DIMMER	LOW/MED/HI

SPEAKERS	
AUTO SETUP	→
SPEAKER SIZE	→
DISTANCE	→
LEVEL CALIBRATION	→
EQ	→
BINDING POSTS	→

BINDING POSTS		CHOICES
AMP SECTION	ON	ON, OFF
FRONT	ON	ON, OFF
SURROUND	ON	ON, OFF
CFG POST	OFF	OFF, FRONT, SURR
POWERED Z2	OFF	ON/OFF

ZONE 2		CHOICES
FIXED VOLUME	NONE	NONE, 0.0 - 100.0
PWR UP MAX VOL	100.0	0.0 - 100.0
PWR UP MIN VOL	0.0	0.0-100.0 MUST BE LESS THAN POWER UP MAX VOLUME
MAX VOLUME	100.0	0.0-100.0 MUST BE MORE THAN POWER UP MAX VOLUME
PWR UP SOURCE	LAST	LAST, INPUT 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
BASS	0	+14 TO -14, 2 DB STEPS
TREBLE	0	+14 TO -14, 2 DB STEPS
BALANCE	0	-20 TO +20, 1 DB STEPS

Zone 2 OSD menu

The ZONE 2 menu allows you to customize Zone 2 to suit:

FIXED: Set the Zone 2 volume at this fixed level.

PWR UP MAX VOL: Set the Zone 2 turn-on volume so it will not come on higher than this.

PWR UP MIN VOL: Set the Zone 2 turn-on volume so it will not come on lower than this level.

MAX VOLUME: Set the Zone 2 volume so it cannot be higher than this level.

BASS: Adjust the bass with up to 14 dB of boost or cut.

TREBLE: Adjust the treble with up to 14 dB of boost or cut.

BALANCE: Adjust the balance with up to 20 dB or adjustment either side.

Binding Posts menu

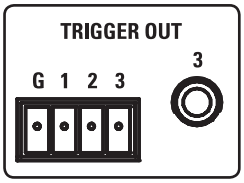
POWERED Z2: Set to ON for the Zone 2 binding posts to supply speaker-level power to your Zone 2 speakers

Triggers

Trigger Outputs

Three trigger outputs supply +12 VDC whenever they are turned on. These can be used to turn on external Sunfire power amplifiers equipped with a 12 V trigger input, or to deploy video screens for example.

Use all standard safety precautions and make sure all the equipment is disconnected before making any connections.



Trigger OSD Menu

The TRIGGER OUTPUT menu allows you to set up each input to turn on a trigger voltage when that input is turned on in the Main Zone, Zone 2, both zones, or off (no trigger). The delay time can also be set from 0 to 5 seconds. Each of the triggers can be setup separately.

MAIN MENU	
TRIMS	➔
TONE	➔
MODES	➔
PRESETS	➔
SETUP	➔

SETUP	CHOICES
INPUTS	➔
SPEAKERS	➔
VIDEO	➔
MAIN ZONE	➔
ZONE 2	➔
CONTROL	➔
DIGITAL OUT	DN MIX/THRU
DIMMER	LOW/MEDIUM/HIGH

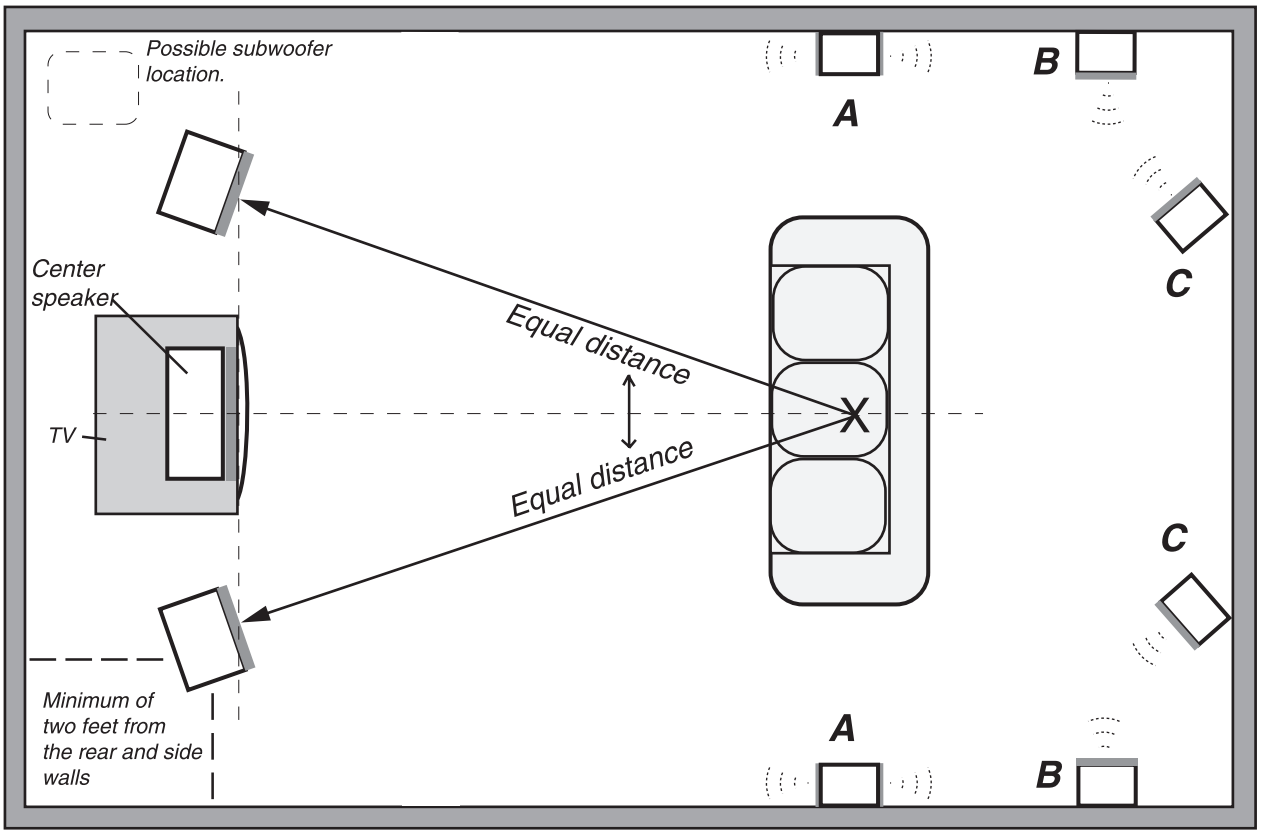
CONTROL		CHOICES
RS232 BROADCAST	Y	Y, N
TRIGGERS	➔	
FRONT IR SENSOR	NORM	NORMAL,NO RPT,OFF
SIRIUS RESET		
SETTINGS SAVE	➔	
SOFTWARE VER.	X,Y,Z	FIRMWARE REVISION
EX VERSION	X,Y,Z	FLASH REVISION
BT VERSION	X,Y,Z	BOOTLOAD REVISION

TRIGGERS	
TRIGGER OUTPUT 1	➔
TRIGGER OUTPUT 2	➔
TRIGGER OUTPUT 3	➔

TRIGGER OUTPUT	1	2	3	CHOICES
DELAY TIME	1S	1S	1S	0 TO 5 1 SEC STEPS
1 HD/BD	MAIN	ZONE 2	M/Z2	OFF, MAIN, ZONE 2, M/Z2
2 SAT	MAIN	ZONE 2	M/Z2	
3 DVR	MAIN	ZONE 2	M/Z2	
4 MP3	MAIN	ZONE 2	M/Z2	
5 DVD	MAIN	ZONE 2	M/Z2	
6 CABLE	MAIN	ZONE 2	M/Z2	
7 VCR	MAIN	ZONE 2	M/Z2	
8 CD	MAIN	ZONE 2	M/Z2	
9 HD/BD-7.1	MAIN	ZONE 2	M/Z2	
10 SIRIUS	MAIN	ZONE 2	M/Z2	
11 TUNER	MAIN	ZONE 2	M/Z2	
12 FRONT	MAIN	ZONE 2	M/Z2	

Appendix

Speaker Placement



Pair **A** are bipole surround speakers, pair **B** and **C** are conventional surround speakers or surround back options.

The Front Speakers

You should closely follow the placement recommendations of your speaker manufacturer, with the addition of the following points:

The left and right front speakers should be positioned so that your TV is exactly centered between them. This will help focus your attention towards the screen.

For the best performance when using Sonic Holography, the left speaker should be set exactly the same distance and angle away from your listening position as the right speaker. It is recommended that you use a tape measure to set them up to be the same distance away, within about half an inch tolerance.

If you have a smaller TV, the speakers should be no more than two feet away from the sides of the TV.

If possible, have the center, left and right speakers at the same height (within two feet). This will help give a smooth transition when sound effects move from speaker to speaker.

Ideally, the speakers should be no closer than two feet from the rear and side walls, in order to reduce any reflections that might upset the imaging. If your speakers are closer than this, you can experiment by adding sound deadening material such as drapes on the walls to reduce any unwanted reflections.

The Center speaker

Most movie dialog will come from the center speaker, so careful positioning is an important part of a good home theater system. Your eyes and ears should focus your attention towards the center of the screen.

The center speaker can sit above, or below the TV monitor, as long as it is located on the centerline and not off to one side.

Position the front face of the speaker close to the front edge of any TV cabinet. (The sound waves may otherwise reflect off the top of the TV cabinet and distort the center imaging).

....Speaker Placement continued

In some systems, two center speakers are used; one on either side of the TV. As they are in mono, the result is a sound image that is positioned exactly at the screen center.

Surround Speakers

Place each surround speaker to be an equal distance away from your central listening position, and keep them at least one or two feet above ear level.

A The diagram on the previous page shows the use of bipole or dipole surround speakers. These are usually positioned to the side of your listening position.

B and C Conventional surround speakers can be placed behind the listener, on the rear walls or the side walls. Adjust the angle so they do not point directly at the listener but cause reflections from the sidewalls or the ceiling. This will give the effect of broadening the rear soundstage so that you cannot distinguish the sound as coming from a small box on the wall but from a larger area behind you.

LS1/LS2 OPTIONS

Two sets of binding posts and line out jacks are available for surround speakers and can be toggled in the setup menu. If you have bipole surround speakers for movies and direct fire surround speakers for music, you can wire both pairs up and switch between them in your setup menus.

Surround Back Speakers

The TGR-401 has two extra outputs for surround back speakers. These create a wonderful sense of realism in surround effects during playback of Dolby Digital EX, Dolby Pro Logic IIx, and DTS ES.

The TGR-401 can be configured for one or two surround back speakers. Ideally, all the surround speakers should be of the same make and model, and fitted at similar heights to produce a smooth continuous soundfield.

If you are connecting one surround back speaker, connect its amplifier input to the TGR-401 **left** surround back output. Place the speaker directly behind your listening position.

Note that the surround back output posts are inactive if Zone 2 speakers are powered by the TGR-401.

Subwoofer Location

The TGR-401 has one output connections for a powered subwoofer.

The best location for a single subwoofer can be found by playing some heavy bass and proceeding as follows:

1. Place the subwoofer right on the seat of your couch or listening easy chair.
2. You can then either run the calibration (noise) signal through it, or simply plug the analog outputs of a CD player directly into your subwoofer's low-level inputs. Turn down the subwoofer's volume level before turning on the CD, then play some of your favorite music samples with heavy bass.
3. Walk around the room, standing in all the positions where you might be able to place the subwoofer. This is usually somewhere close to the corners of the room. Try locations fairly close to the front speakers.
4. Notice where in the room the bass output from the subwoofer sounds the loudest. Shut things down and install the subwoofer there.
5. This is the best position for the subwoofer. The bass will sound the best when you are sitting in your normal listening position.

The RS-232 Port

The TGR-401 has a rear panel RS-232 Serial communication port. This allows the FLASH memory to be upgraded to the latest software by connecting to a PC.

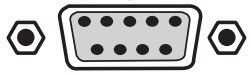
The TGR-401 software may be updated to refine operational details and to include new features. Downloadable updates will be posted on our website:www.sunfire.com.

The port can also connect to the serial port of a Home Theater Controller, to operate the TGR-401 remotely.

Communications

Serial RS-232, 19200 Baud, 8-N-1

DB-9 Wiring



PINS 1, 6 and 4 are joined together internally

PINS 7 and 8 are joined together internally

PIN 2- Data from TGR-401 to controller (TGR-401 transmit)

PIN 3- Data from controller to TGR-401 (TGR-401 receive)

PIN 5- Ground/Common

PIN 9- No connection

The RS-232 connector is female.

Serial Cable

To connect the TGR-401 port to a computer, you will need a "straight-through" serial cable. This has connector pins at one end connected directly to the pins of the connector at the other end. For example, pin 1 at one end connects to pin 1 at the other end, pin 2 connects to pin 2, pin 3 to pin 3 and so on.

These common cables are available from most computer stores (or from Radio Shack as # 26-117). It should be 9-pin male at one end, to fit into the TGR-401 and normally 9-pin female at the other, to fit into your computer's serial port (COM1 or COM2).

Update Procedure

1. The current version level of the software running your TGR-401 can be found by looking at the SOFTWARE VER. OSD menu. This is under the CONTROL menu (see page 35).
2. Downloadable updates are on our website www.sunfire.com. If the website file is newer than your current version, follow the website directions to update your TGR-401.
3. Record your calibration, preset stations or other settings. In most cases, the upgrade will not affect any of these settings, but it is good to record them just in case.
4. Turn off your computer and the TGR-401. Position them close enough so that they can be easily connected using your serial cable. If you have a laptop computer, then it may be easier to bring that close to the TGR-401.
5. Connect the TGR-401 RS-232 port to the corresponding serial port on your computer.
6. Turn on the TGR-401 and your computer.
7. Install the firmware update application to your PC.
8. When the file transfer is complete, press the Power switch on the TGR-401 front panel. This completes the upgrade.
9. Turn off your computer and the TGR-401, and disconnect the serial cable.

External Control

The RS-232 port also allows the TGR-401 to be controlled externally by Home Theater controllers and computers.

Serial command set

Note for programmers and developers: Contact Sunfire Technical Support, or our website www.sunfire.com for a list of serial commands.

Troubleshooting Guide

The Sunfire TGR-401 is expertly designed and built to provide years of trouble-free performance. Most problems that occur can usually be solved by checking your setup or making sure that the audio and video components connected to the TGR-401 are on and fully operational.

The following information will help you deal with common setup problems you may experience during normal use of your unit. If problems persist, contact your Sunfire Dealer for help.

No sound from one or more speakers

- Speaker cables may have come undone. Turn off your system and check the cables, and tighten the binding posts.
- An audio cable may have an internal break.
- The volume level is low for the channels concerned. Recheck the level calibration (page 39).
- The Mute switch is on.
- The channel has not been turned on in the Speaker Size Menu (page 33).
- The correct surround mode is not selected. (Some DVD discs are stereo only).
- Note: In Source Direct mode, only the front left and right speakers are engaged. They must also be set to Large.

No subwoofer or poor output

- The subwoofer's amplifier is off, or its controls are set low.
- Are all speakers set Large?
- SUB is not switched on in the Speaker Size Menu (page 39).
- Recheck the level calibration procedure (page 39).
- Adjust the Crossover and check Bass Management (page 39).
- See page 51 to find the best location for your subwoofer.
- If the bass is weak during Dolby Digital or DTS playback, check the correct audio output is selected in your DVD menu, otherwise it may just play stereo into your TGR-401 and you won't get the true LFE signal to the subwoofer.

Poor Tuning of Stations

- The antenna may be incorrectly attached.
- Station not correctly tuned in, weak or off the air.
- You can improve reception by using external antennas. Some cable TV feeds also offer FM reception.

The same AM station can be heard at different frequencies

- One wire of the AM loop antenna may not be connected.
- A loop antenna is required for AM reception, as it forms part of the front-end tuned circuit.

Fully Automatic does not work

- Make sure the Auto On mode is set to Y in the MAIN ZONE setup menu (page 35) and that each input is configured for AUTO ON in their respective INPUTS menu (page 33).

In order to automatically choose the new input source, this mode senses the following active signals: Left audio signals, Video signals, Digital signals

Note that LD or DVD players sometimes put out digital signals even when the disc is paused or stopped. Make sure that any sources are turned off when not in use.

If a source is always active, the automatic operation may return to that input as the analog audio varies. In this case, you should try and turn off any unused sources, or turn off the automatic mode.

If you are listening to a mono source, make sure it connects to a left input, or use a "Y" cord to feed both left and right inputs.

Certain inputs cannot be selected

- Check the INPUTS menu of the OSD (page 33), and make sure that the input has not been disabled in that particular Zone.

No TV picture

- Make sure that the video input of your TV monitor is connected to the Main monitor output on the TGR-401 rear panel.
- Check the video input is correct in the INPUTS menu of the OSD (page 33). Select the type of video input you have connected.
- Check that your TV monitor is selecting it's correct video input.
- Check the video connection from your selected source component into the TGR-401.
- Make sure that you are using the same video connections. For example, if your source is connected using S-video, then the TV monitor must also use S-video.
- If in doubt, try connecting the video output from your source directly to your TV monitor. This will help you narrow down the problem.
- Do not connect more than one type of video connection to the same input. Choose only the highest quality video type.

No Sonic Holography Effect

- It is essential that your front speakers are positioned correctly. See page 50.
- Sonic Holography is most effective in 2-channel operation. It gives a more accurate perception of the position of musicians and sound effects. The results may be masked if you are using it in a surround mode.

No Tone Controls

- They will not work if you are using the 8-CH input, or Source Direct mode.

No Dolby Digital, DTS playback

- See page 43
- Make sure your player's digital output is set to BITSTREAM for Dolby Digital or DTS. This is often a player's setup menu item, not the disc's menu.
- Some discs are available with a number of different options, such as Dolby Digital or Dolby Pro Logic. Make sure that you have selected the correct mode from your player's menu.
- Only digital inputs will work for these modes. Check that your player's digital output is connected to the appropriate corresponding digital input on your TGR-401.
- There is no AC-3 RF input connection for LaserDisc players. You will need an external RF demodulator.
- Look for the Dolby Digital or DTS Logo on the source program's box.
- Check the calibration procedure from time to time. This is an excellent way of checking that all speakers are working correctly.

Noise bursts are heard when DTS encoded CDs or LDs are played

- Compressed DTS data uses the normal digital audio tracks of CDs and LDs. This analog noise may be heard in your system before the DTS digital signal is locked on, or it may appear as a background hiss.
- If you are not using Zone 2, try to reduce or prevent this noise by disconnecting any analog connections to your CD or LD players. Just use the Digital connections.

No On Screen Display

- See page 31
- Press the remote's MENU button to activate the OSD. It should be present even when no video source has been selected.
- There is no pop-up text for component video connections, but there is full-page OSD.

On Screen Display flickers when engaged

- One of the features of the TGR-401 is that its OSD circuit is not in the video signal path all the time. This allows for the best possible video quality. When OSD pop up text appears, or the Main OSD menus are engaged, there can be a slight flicker as the OSD circuit is switched in.

Sound drops out with CD or DVD playback

- Make sure the disc is not dirty or scratched.
- Some inexpensive players and changers tend to miss-track more often, causing dropouts with an external DAC.

Remote won't Learn

- See page 28
- Make sure you are pointing the original remote into the receiving window of the Sunfire remote. This is located on the top edge of the remote.
- Try touching and holding the first button to be learned.
- Do not do the learn procedure in bright lighting or sunlight.
- Make sure the Sunfire remote is correctly in its LEARN mode.
- Try varying the distance between the remotes from 1 to 2 inches, and see if the learn procedure improves.

Remote will not work

- See pages 25-30
- Make sure the batteries are not dead, or installed incorrectly.
- Make sure the remote is set on the correct device display for the component you are trying to control.
- Make sure that the buttons have not been erased or learned over.
- Make sure that the TGR-401 front panel receiver window is not obstructed.
- Check that the front or rear IR receivers have not been turned off in the OSD CONTROL menu.

Zone 2 does not work

- See page 48
- Use the remote control's Zone 2 device button, followed by the Power button to turn Zone 2 on. Alternatively, press the front panel Zone 2 button, then the main Power button.
- The front panel Zone 2 Power light will be on when Zone 2 is on. The Zone 2 adjust light turns on when the zone is being adjusted from the front panel.
- Make sure that Powered Z2 is set to ON in the OSD Binding Posts Menu).

Zone 2 does not play digital inputs

Zone 2 can play analog sources independent of what is playing in the Main Zone. It **cannot** play from a digital-only source **unless** that input is selected and playing in the Main Zone. To play a source such as a DVD player in Zone 2 independent of the Main Zone, make sure you connect the player's L/R analog audio output to the TGR-401.

TGR-401 does not respond to any controls

- Unplug AC power momentarily, and press Power to turn back on
- If this does not work, try the reset procedure on the next page.

Updating firmware problems

- See page 52
- If you have a Palm Pilot™ or similar device with “HotSync™” or its equivalent, you may need to disable this software before proceeding. This software ‘seizes’ control of a serial port on your machine and prevents the Sunfire software from accessing that port. Use another port or disable HotSync.
- Check that the serial cable is connected correctly between the TGR-401 and your computer's serial port.

A Hum is heard in your speakers

This problem is more than likely caused by a “ground loop” in your system, rather than a fault in the TGR-401. Follow these steps to isolate the main cause of the hum, there may even be more than one.

- Remember to turn off all components in your system, including the TGR-401, before disconnecting or connecting any cables.
- Disconnect the following items in order, and check each time if the hum has gone away:
- Disconnect all cables which come from outside the room, such as cable TV, satellite TV, or roof top antennas. Make sure that they are disconnected where they first enter the room, so they are making no connection to the TGR-401 or the TV, or any other component. If the hum is caused by the cable TV line, then you will need a “ground loop isolator.” This is an inexpensive device fitted in line with the coaxial cable feed. Contact your cable company or your Sunfire Dealer for assistance.
- Disconnect all connections from the TGR-401 to your TV.
- Disconnect any component which has a grounded power cord.
- If the hum persists, disconnect all the source components one at a time from the back of the TGR-401, until you identify the problem.
- Ground loop isolators are available for audio lines and video. Ask your Sunfire Dealer for assistance.
- Try moving the speaker cables away from any power cords. Try just one speaker, connecting it to different channels and see if an amplifier channel is bad.
- If you are still having a problem, Sunfire’s dealers and technical support staff will assist you.

Other causes of noise

- Speaker noise may also be caused by interference or noise on your AC line. Make sure there are no large appliances sharing the line, or halogen lamps or light-dimming Triac devices.
- Try connecting your system to another AC socket on a separate line.
- If the hum is heard from within the TGR-401 and not through the speakers, this may also be caused by interference on the AC or DC lines. The power transformers may turn this interference into an audible noise. Internal hum can be made worse by a shelf or cabinet resonating, so try moving the TGR-401 to another shelf.
- Try moving your components further away from the TV, especially if you ever notice the screen has changed color in the area closest to the component.
- If you have very high efficiency speakers, these may show up noise which other speakers may not.

General notes

Check the following to get the best out of your TGR-401:

- Each speaker's average impedance is not less than 4 ohms.
- The TGR-401 has good ventilation, and none of its vents are covered.
- Try setting all the speakers to 90 Hz, and let your subwoofer handle the heavy bass.
- Check that the amplifier power output is a good match for your speakers. If your speakers are inefficient, consider using an external power amplifier.

Remote Control Codes (see remote control P-Pro on page 27)

TVS, PLASMAS, PROJECTORS, MONITORS

ADMIRAL 072 081 161 160
ADVENT 247 388
AKAI 197 146 248 404 405 458
AMARK 112 143
AMPRO 073 167 157 183
AMSTRAD 052
ANAM 043 054 056 080 112 131
AOC 197 004 112 058
APEX DIGITAL 006 310
AUDIOVOX 076 103 273 452 453 454
AVENTURA 401
AVION 441
BARCO 233
BENQ 423 443
BLAUPUNKT 088
BOXLIGHT 266
BROKSONIC 238
CAIRN 201
CANDLE 197 002 003 004
CAPEHART 058
CETRONIC 043
CITIZEN 197 002 003 004 043 101 103 143
CLASSIC 043
CONCERTO 004
CONTEC 043 050 051
CORONADO 143
CRAIG 043 054
CROWN 043 143
CURTIS MATHES 197 101 004 143
CXC 043
DAEWOO 004 016 043 044 076 103 114 125 127 143 269 369
DAYTRON 004 143
DELL 319 320 321
DIBOSS 329
DIGITAL PROJECTION 437
DREAMVISION 235 312 313 314 343 344 345
DURABRAND 401
DWIN 177 226 257
DYNASTY 043
DYNATECH 062
EIKI 187
ELECTROHOME 024 076 143 196
EMERSON 197 004 005 028 043 047 048 050 051 076 096 143 151 153 154 155 401
EPSON 324
ESA 323
FISHER 007 057
FUJITSU 198 223 219 246 299 346 396 410
FUNAI 028 043 052 401
FUTURETECH 043
GATEWAY 242 268
GE 197 008 009 034 056 073 074 130 144 155 160 161 165 004 091 157 183
GEM 391
GOLDSTAR 004 102 106 112 113 116 119 127 143
GRUNDIG 220 083
HALLMARK 004
HANNSPREE 381
HISENSE 419
HITACHI 411 004 009 010 011 012 023 075 143 158 163 166 072 221 250 311 361
380 460
HP 421 316 327 378 379
HYUNDAI 337 338
INFINITY 164
INFOCUS 449 333 230 330 331 332 252 409
INSIGNIA 350 399 400 401 402 403
JBL 164
JCPENNEY 197 004 008 009 024 030 065 101 143 156 160
JENSEN 013
JVC 420 034 038 070 083 145 199 210 240 241 244 245 317 318 406
KEC 043
KENWOOD 197 070
KLOSS 002 059
KMC 143
KNOLLSYSTEMS 230 409
KTV 197 043 143 154
LG 363 365 243 284 283 286 364 366
LODGENET 072
LOEWE 222 223 224 164 322 422
LOGIK 072
LUXMAN 004
LXI 166 007 015 052 081 160 164
MAGNAVOX 197 003 004 022 059 060 061 063 064 127 160 164 094 226 390
MARANTZ 197 164 184 397 281
MATSUI 164
MAXENT 242
MEMOREX 007 072 004
METZ 088
MGA 197 004 024 028 042
MINERVA 088
MINTEK 362
MISAKAI 401
MITSUBISHI 450 004 024 028 040 042 109 124 146 191 225 237 267 300 348
MTC 197 004 062 101
NAD 015 025
NEC 272 448 132 130 134 197 040 016 024 056 019 236 237 262 281 428
NIKEI 043
NUVISION 351
OLEVIA 432 376 394
ONKING 043
ONWA 043
OPTOMA 249 265 270 360
OPTONICA 019 081
ORION 096
PANASONIC 429 034 056 080 092 164 208 261 296 295 297 298 359 377 383 430
PHILCO 197 003 024 056 059 060 063 064 164 004
PHILIPS 274 197 003 004 005 038 059 093 164 127 184 206 259 260 264 294 424
425 431
PHILIPS/MAGNAVOX 239 260 294
PIONEER 459 447 197 018 023 025 116 135 190 203 204 209 234 237 334 335 336
374 385 393 397 438
POLAROID 352 353 354 355 356 357 358 388
PORTLAND 004 143
PROJECTIONDESIGN 417 418
PROSCAN 144 160 161 165 167
PROTON 004 058 131 143 171 173 193 392
PROTRON 392 398
QUASAR 034 056 092
RADIO SHACK 019 043 143 004 127
RCA 333 160 161 165 065 156 144 197 004 023 024 056 074 152
REALISTIC 007 019 043 047
ROCTEC 186
RUNCO 168 169 178 179 180 181 182 183 073 157 340 341 342 395 414 415 416
SAMPO 197 058 004 202
SAMSUNG 463 004 050 089 101 105 127 143 160 211 228 229 253 254 258 275 309
375 384 427 434 461 462 464
SANYO 166 007 020 053 057 082 187 266 347
SCEPTRE 276
SCOTT 004 028 043 048 143
SEARS 015 030 004 007 028 057 143 094 160 082 165 166
SELECO 189 200 212 227 205
SHARP 326 170 081 019 028 029 014 004 022 143 175 214 251 306 307 308
SHERWOOD 349
SIEMENS 088
SIGNATURE 072
SIM2 205 200 313
SOLE 231 232
SONY 446 070 085 139 147 126 185 194 207 213 277 278 279 412 413 444 445
SOUNDESIGN 004 028 003 043
SPECTRICON 112
SSS 004 043
SUPERSCAN 401
SUPRE MACY 002
SVA 328
SYLVANIA 197 003 059 060 063 064 164 044 160 127 052 401
SYMPHONIC 052 401
SYNTAX OLEVIA 376 394 432
TANDY 081
TATUNG 056 062
TCL 426
TECHNICS 034 080
TECHWOOD 004
TEKNIKA 002 003 004 024 028 043 072 101 143
TELEFUNKEN 037 046 086 087
TELERENT 072
TERA 172
THOMPSON 215
TMK 004
TOSHIBA 455 007 015 030 040 062 101 138 216 287 290 291 230 288 289 292 293
315 237 325 382 456 465
TOTEVISION 143
UNIVERSAL 008 009
VIDEO CONCEPTS 146
VIDIKRON 342 174 184 188 192 340 395 406 414 415 439 440
VIDTECH 004
VIEWSONIC 271 242 389 390 433
VIZIO 386 387
WARDS 004 008 009 019 028 060 061 063 064 072 074 143 164 034
WESTINGHOUSE 076 280 435 436
WINBOOK 339
YAMAHA 197 004 370 371 372 373 407 408 451
YORK 004
YUPITERU 043
ZENITH 363 072 073 095 103 157 183 217 243 282 283 284 285 286 363
ZONDA 112

CABLE TV DESCRAMBLERS/TUNERS

ABC 103 003 004 039 042 046 053
ADELPHIA 043 074 110 111
ADVANCED NEWHOUSE 043
ALTRIO 043
AMERICAST 099
ANTRONIX 014
ARCHER 005 007 014
ARMSTRONG 074
AT&T BROADBAND 074
ATLANTIC BROADBAND 043 074
BELLSOUTH 099
BLUE RIDGE 043 074
BRESNAN 074
BUCKEYE COMM 074
CABLEVISION 108 043 074
CENTURION 092
CENTURY 007
CHARTER 043 074 110 111
CITIZEN 007
COGECO 074
COMBANO 080 081
COMCAST 110 043 074
COMSAT 074
COMTRONICS 030
COX DIGITAL CABLE 043 074
DIGICABLE 101
EAGLE 020 030 040
EASTERN 057 066
ELECTRICORD 032
GEMINI 008 054
GE 072
GENERAL INSTRUMENT 103 002 003 004 008 009 010 069 074 104
GNC 099
GOLDEN CHANNEL 030
HAMLIN 049 050 055
HITACHI 103 055
INSIGHT 074
JERROLD 103 002 003 004 008 009 010 069 074 104 109 110
M-NET 037
MAGNAVOX 010 012 064 079 094
MASSILLON 074
MEDIAONE 107
MEDICOM 074
MEMOREX 052
MOTOROLA 103 002 003 004 008 009 010 069 074 104 109 110 111 112
MOVIE TIME 028 032
MOXI 111
NCTC 074
NOVAPLEX 092
NSC 015 028 038 071
OAK 031 037 053
PACE 043 074
PANASONIC 044 047
PARAGON 052
PHILIPS 006 012 013 020 085
PIONEER 103 034 051 063 076 105 043
PRUCER 059
PTS 011 071 074
PULSAR 052
QUEST 112
RCA 047
RCN 074
RECOTON 098
REGAL 049 050
REGENCY 057
RODGERS 043
SAMSUNG 030
SCIENTIFIC ATLANTA 003 011 041 042 043 045 046
SEREN 043
SERVICE ELECTRIC 074
SHAW 074
SIGECOM 043
SIGNAL 030
SIGNATURE 103
SLMARX 030
SONY 108
SPRUCER 047 078
STARCOM 002 004 008 009
STARGATE 008 030 097 104
SUSQUEHANNA 043 074
TADIRAN 030
TIMELESS 030
TIME WARNER 043 074
TOCOM 039 040 056
TOSHIBA 052
UNIKA 007 014
UNITED CABLE 004 053
UNIVERSAL 005 007 014 032 035
VIDEOTRON 043
VIEWSTAR 012 015 018 086 087 088 089
WIDE OPEN WEST 043 099
ZENITH 052 060 093 100

DVD PLAYERS

ADCOM 157
AIWA 136 146
ALPINE 098
AKAI 281
APEX DIGITAL 087 111 112 115 116
ARCAM 122
AUDIOVOX 284
CALIFORNIAAUDIO 021 124
CAMBRIDGE AUDIO 215 216
CARYAUDIO DESIGN 174
CINEVISION 219
CLASSE 167
COBY 258 260
CYBER HOME 133 227 271
DAEWOO 132
DENON 173 181 007 080 138
GATEWAY 175
GE 026 027
GRADIENTE 021
GRUNDIG 083
GO VIDEO 137 091 217 218 219 220 221 222 224
HARMAN KARDON 084 140
HITACHI 101
FUNAI 143
ILO 268
INSIGNIA 143
INTEGRA 142 180 192 280
JVC 012 168 203 212 257
KENWOOD 123 151
KISS 179 279
KLH 135
KRELL 104
LECSON 126
LEXICON 148
LG 091 057 074
LITEON 264 265
MAGNAVOX 096 066 143 282
MALATA 267
MARANTZ 201 202 083 105
MCINTOSH 125
MEMOREX 163
MERIDIAN 153
MINTEK 111 282
MITSUBISHI 017
MYRYAD 134 102
NAIM 226
NAD 088 155 278
NAKAMICHI 103
ONKYO 076 035 180 274
OPPO 266
PANASONIC 199 259 285 021 042 138 139 144 150 198 205
PHILIPS 166 277 066 095 105 176 276
PIONEER 283 272 023 092 099 107 108 131 162 172 178 213 232
POLAROID 233 234 235 236 237 284
PRIMARE 193 194
PROCEED 086
PROSCAN 026 027
RCA 026 027 273
RJTECH 269
ROTEL 204
SAMSUNG 200 159 254 275 056 070 119 137 165 170
SANSUI 154
SANYO 147
SENSORY SCIENCE 217 222 223
SHARP 094
SHERWOOD 245 246 247 248 249 250
SONY 126 286 033 118 145 160 189 191 238 239 240 241 242 243 251 252 253
261 262 263
SYLVANIA 143
SYMPHONIC 143
TAG MCLAREN 156
TEAC 270
THETADIGITAL 023
THOMPSON 026 027
THULE 177
TOSHIBA 183 273 035 034 128 141 130 164 184 185 186 187 188 214
VENTURER 149
VINC 161
YAMAHA 197 196 195 042 089 066 158 166
ZENITH 057 074 091 182

TV/DVD COMBOS

AIWA 146
AKAI 281
AUDIOVOX 284
DURABRAND 143
EMERSON 143
ESA 143
FUNAI 143
INSIGNIA 143
POLAROID 236 284
SAMSUNG 165
SV2000 143
SYLVANIA 143
SYMPHONIC 143
TOSHIBA 130
TV/DVD/VCR Combos
DURABRAND 143
EMERSON 143
ESA 143
INSIGNIA 143
MAGNAVOX 143
PANASONIC 144 205
POLAROID 235
SV2000 143
SYLVANIA 143
SYMPHONIC 143
TOSHIBA 164

DVD/VCR COMBOS

CINEVISION 219
GO VIDEO 137 217 218 219
JVC 168 257
PANASONIC 150
PHILIPS 105 (VCR Functions for VCR067)
PIONEER 232
POLAROID 234
SAMSUNG 137 159 254
SANSUI 154
SENSORY SCIENCE 217
SONY 145 238 239 240 251 252 253
TOSHIBA 141 187 214
ZENITH 091 182 (VCR Functions for VCR171)

DVD RECORDERS

CINEVISION 219
CYBERHOME 271
GATEWAY 175
GO VIDEO 218 219 220 221 222
JVC 203 257
ILO 268
KISS 279
LITEON 265
PANASONIC 139 259
PHILIPS 176 277
PIONEER 172 232 272
SAMSUNG 254
SENSORY SCIENCE 222
SONY 191 238 239 240 241 242 243 251 252 253
TOSHIBA 188
ZENITH 182

LASER DISC PLAYERS

DENON 206 207
FUNAI 120
KENWOOD 152 013
MAGNAVOX 032 121
MARANTZ 211
MITSUBISHI 121
NAD 121
OPTIMUS 049 013
PANASONIC 113
PHILIPS 032
PIONEER 106 117 121
RADIO SHACK 120
RCA 002
REALISTIC 049
RUNCO 127
SANYO 075
SHARP 152 013
SONY 053 110
TECHNICS 113
THETADIGITAL 032
TOSHIBA 152 106
YAMAHA 043 129

VCR

AIWA 034 161 169
AKAI 016 043 046 124 125 142 146
AMPRO 072
ANAM 031
AUDIO DYNAMICS 012 023 039 043
BROKSONIC 035 037 129
CANON 028 031
CAPEHART 108
CRAIG 003 040 135
CURTIS MATHES 031 041
DAEWOO 005 007 010 065 108 110 111 112 116 117 119
DAYTRON 108
DBX 012 023 039 043
DYNATECH 034 053
ELECTROHOME 059
EMERSON 005 006 017 025 027 029 031 034 035 036 037 046 101 116 129 131 138
153 162
FISHER 003 008 009 010
FUNAI 034
GE 031 063 072 107 109 144 147
GO VIDEO 132 136 155 040 115
GOLDSTAR 012 013 020 101 106 114 123
HARMAN KARDON 012 045
HITACHI 004 018 026 034 043 063 137 150 160 013
INSTANTREPLAY 031
JCL 031
JCPENNEY 012 013 015 040 066 101
JENSEN 043
JVC 012 031 043 048 050 055 060 130 150 152 166 172 173
KENWOOD 014 048 034 047
LG 171
LLOYD 034
LXI 003 009 017 034 106
MAGIN 040
MAGNAVOX 031 034 041 067 068 156 164
MARANTZ 012 031 067 069 156
MARTA 101
MATSUI 027 030
MEI 031
MEMOREX 003 010 014 031 034 053 072 101 102 134 139
MGA 045 046 059
MINOLTA 013 020
MITSUBISHI 013 020 045 046 051 059 061 142 151 049 168 174 175
MTC 034 040
MULTITECH 024 034
NEC 012 023 039 043 048
NORDMENDE 043
OPTONICA 053 054
ORION 025
PANASONIC 066 070 083 133 140 145 157 163 074 167
PENTAX 013 020 031 063
PHILCO 031 034 067
PHILIPS 031 034 054 067 071 101 156
PILOT 101
PIONEER 013 021 048
PORTLAND 108
PULSAR 072
QUARTZ 002 014
QUASAR 066 145 075
RADIO SHACK 123
RCA 013 020 041 107 109 140 144 145 147 034 040 158
REALISTIC 003 008 010 014 031 034 040 053 054 101
RICO 058
RUNCO 148
SALORA 014
SAMSUNG 032 040 066 102 104 107 109 112 113 115 120 122 125
SANSUI 022 043 048 135
SANYO 003 007 010 014 134 102
SCOTT 017 037 112 129 131
SEARS 003 008 009 010 013 014 081 101 017 073 112
SHARP 031 054 149 159 165
SHINTOM 024
SIGNATURE 034
SONY 003 031 052 056 057 058 076 077 078 149 154
SOUNDESIGN 034
STS 013
SYLVANIA 031 034 059 067
SYMPHONIC 034
TANDY 010 034
TATUNG 039 043
TEAC 034 039 043
TECHNICS 031 070
TEKNIKA 019 031 034 101
THOMAS 034
TMK 006
TOSHIBA 008 013 042 047 059 079 082 112 131 081 170
TOTEVISION 040 101
UNITECH 040
VECTOR RESEARCH 012
VICTOR 048
VIDEO CONCEPTS 012 034 046 141
VIDEOSONIC 040
WARDS 003 013 017 024 031 034 040 053 054 131
YAMAHA 012 034 039 043
ZENITH 034 048 056 058 072 080 101 171

TV/VCR COMBOS

AIWA 169
DAEWOO 005 117
EMERSON 153
FUNAI 034
GOLDSTAR 101 123
HITACHI 034
JCPENNEY 101
LG 101 123
LLOYD 034
MAGNAVOX 034 067
MEMOREX 101
PANASONIC 070 167
PHILIPS 034 067
RADIO SHACK 123
RCA 034
SEARS 101
SONY 057 154
SYLVANIA 067
SYMPHONIC 034
THOMAS 034
TOSHIBA 170
ZENITH 034

AUDIO AMPS, PREAMPS, A/V RECEIVERS

ADC 007
ADCOM 082 092 225 161 269 355 356 366
AIWA 018 104 170 202 203 213 211 188
AKAI 138 189
AMC 038 125 126 127 128 258 281 282
AMEND 054
AMX 196
ANGSTROM 142
ANTEX ELECTRONICS 588
ANTHEM 335 336 337 338 339
ARAGON 157 158 042 043 081 112
ARCAM 141 325 418 419 504 590 591 592 593 594
ATLANTIC TECHNOLOGY 342
AUDIO ACCESS 147
AUDIO ALCHEMY 135
AUDIO CONTROL 448 572 623
AUDIO DESIGN ASSOCIATES 194 221 011
AUDIO EASE 021 196 207
AUDIO FILE 071
AUDIO MATRIX 167
AUDIO RESEARCH 399 406 423 424 425 426
AUDIO SOURCE 273
AUDIO TECHNICA 134
B & K 096 097 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312
313 314 315
BOSE 409 460 548 070 170 224 347 459 532
BOSTON ACOUSTICS 447
BRIX 555
BRYSTON 023 551
CAMBRIDGE AUDIO 522 523 524 525 630 683
CARVER 006 027 028 061 071 201 214 226 180 185 022 029 077 284
CARYAUDIO DESIGN 443 519
CASIO 076
CHIRO 140
CINEMASOUND 034 134
CITATION 148 272
CLASSE 410 411 484 537 538
CLARION 026
COLORADO VNET 539
COMPAQ 382
CURTIS MATHES 076
DELPHI 415 515
DENON 340 400 422 002 034 109 215 229 230 027 037 234 259 316 330 341 349
350 396 401 402 444 564 568 569 601 602 649 650 651 677 678 679 680
681
EIGER 149
ELAN 468 472 469 470 471 057 290 371 473 474 475 476 477 481 482 483 508
509
EAD 099 098 466 467
ESCIENT 368 381 393 451 452 453 454
FANFARE 352
FISHER 047 214 180 182 297
FLEXTRONICS 378
FOSGATE 062 231 342
GE 056 260
GOLDSTAR 008
HAFLER 174
HALCRO 596 597
HARMAN KARDON 318 231 233 254 153 154 118 121 227 277 317 329 365
HITACHI 020
IMERGE 371
INKEL 197
INSIGNIA 589
INTEGRA 486 441 570 354 371 438 439 440 442 487 586
JAMO 398
JBL 263 621 622
JCPENNEY 076 216
JEFF ROWLAND 206
JENSEN 058
JVC 279 240 163 191 114 266 291 389 390
KEF 530
KENWOOD 412 320 026 066 145 146 181 190 197 192 182 199 151 222 180 005 280
319 367 374 413 414 420 517 550
KINERGETICS 220 140
KLH 331
KLIPSCH 157 158 042 043 081 112
KNOLL 531
KOSS 216 573
KRELL 376 384 500 624 150 072 321 497 498 499 672 673 674
KYOCERA 007
LEXICON 357 360 120 235 236 237 324 358 359 361 362 363 364
LINN 124 377
LUXMAN 137 139 052 165 115 004 009
LXI 076 056
MAGNAVOX 086 164 152 208
MARANTZ 488 492 385 006 028 031 040 063 185 186 251 265 119 289 326 327 328
371 489 490 491 493 563
MARK LEVINSON 322
MCINTOSH 238 286 496
MCS 076
MERIDIAN 100 012 013 628
MICRO LAB 394
MICROMEGA 119
MITSUBISHI 242 243 204
MONDIAL 157 158 042 043 081 112
MOTOROLA 386
MUSICAL FIDELITY 407 408 647 648
MYRYAD 276 293 455 456 457
NAD 186 113 283 478 479 598 603 604 605
NAIM 533 534 535
NAKAMICHI 111 244 245 172 183 287 323 450 615
NEC 176
NETSTREAMS 616 617 618 619 620
NILES 403
NIRO 343
NUVO 404 405 606 607 608 609 610
OLIVE 584
ONKYO 486 441 017 046 064 107 108 187 079 080 090 179 209 270 275 438 439
440 442 487 536 552 586 629
OPTIMUS 026 041 138
OUTLAW 342
PANASONIC 032 195 219 177 292 383 516 626 627
PARASOUND 333 334 553 554 129 130 132 261 294 295
PASS LABS 431
PHAST 196
PHILIPS 249 250 251 063 119 296
PIONEER 480 542 014 033 039 044 045 050 069 159 168 116 035 078 198 397 513
518 520 521 543 544 545 546 547 556
PLINIUS 458
POLKAUDIO 029 514
PRIMARE 461 462 463 464 465
PROCEED 144 268
QUAD 526
RCA 010 048 117 156 067 288 549
REALISTIC 019 056 073 075 095
REQUEST 351 511 611 612 613
ROKU 506 507
REVOX 162
ROTEL 501 502 503 074 083 085 654
RUSSOUND 379 391 392 445 446 527 528 529
SAMSUNG 016 571 653
SANSUI 040 048 110 119 065 228
SANYO 047 059
SCOTT 019 091
SEARS 076
SHARP 026 051 094 131 175 181 652
SHERWOOD 447 024 038 055 102 103 105 106 051 030 348 370 388 562 675
SIRIUS 585 555
SIMAUDIO 449
SLIM DEVICES 512
SONY 372 417 574 369 018 084 093 223 247 248 160 166 015 101 184 218 271
353 380 395 421 575 576 577 631 640 641 642 632 633 634 635 636 637
638 639
SOUNDESIGN 036
SOUNDSTREAM 084 088
SOUNDMATTERS 375
SSI 068
STS 007
SUGDEN 430
SUMO 171
SUNFIRE 344 345 346 494 495
TAEKWANG 138
TAG MCLAREN 387
TASCAM 625
TEAC 005 019 049 111 212 217
TECHNICS 122 176 193 219 178 177 200 257 262
THETADIGITAL 136
THULE 505
TOSHIBA 060 087 198 278 510
TURTLE BEACH 416
WARDS 180
XANTECH 508 509
YAMAHA 427 557 655 643 644 026 253 169 067 123 133 173 205 264 232 089 274
285 332 373 428 429 432 433 434 435 436 437 540 541 558 559 560 561
565 566 567 578 579 580 581 582 583 599 600 645 646 656 657 658 659
660 661 662 663 664 665 666 667 668 669 670 671 676
YBA 485
ZENITH 143 210
ZON 587

XM RADIOS and TUNERS

ANTEX ELECTRONICS 588
ARCAM 504 591
BOSE 170 532
DELPHI 415 515
FANFARE 352
KENWOOD 550
MYRYAD 457
NAD 113
NAIM 535
NUVO 404 405 606 607
MUSICAL FIDELITY 408 648
PIONEER 556
POLKAUDIO 514
PRIMARE 465
RUSSOUND 445 446
SIRIUS 585 555 550
SONY 380
TASCAM 625
XM SATELLITE RADIO 415 514 515

SATELLITE RECEIVERS

ALPHASTAR 123
AMPLICA 050
BIRDVIEW 129 113 051 126
BSR 053
CABLEVISION 148
CAPETRONICS 053
CHANNELMASTER 013 014 015 018 036 055
CHAPARRAL 008 009 012 077
CITOH 054
CURTIS MATHES 050
DISH NETWORK 122 167 168 184 185 186 187 188
DIRECTV 173 193
DRAKE 005 006 007 010 011 112 116 141 052
DREAM MULTIMEDIA 191
DX ANTENNA 024 046 056 076
ECHOSTAR 038 040 057 058 093 094 095 096 097 098 099 100 122 167 168 184 185
186 187 188
ELECTROHOME 089
EURO PLUS 114
EUROSAT 114
EXPRESSVU 122
FORCE 176
FORTEC STAR 177 178
FUJITSU 017 021 022 027 133 134
GE 151 106 150
GENERALINSTRUMENT 003 004 016 029 031 059 101 148
GOI 122
HITACHI 139 140
HIRSCHMANN 202
HOME CABLE 080 044 029
HOUSTON TRACKER 033 037 039 104 057 051

HTS 122
HUGHES 068 154 161 162 165 166
HYTEK 053
HYUNDAI 149
ICR 023
JANIEL 060 147
JERROLD 148
JVC 122
KATHREIN 108
LEGEND 057
LG 170
LUXOR 144 062
MACOM 010 059 063 064 065
MARANTZ 152 153
MEMOREX 057
MITSUBISHI 068 154
MOTOROLA 148 171
NEXT LEVEL 148
NEXTWAVE 028 124 125
NORSAT 069 070
NV 195 196 197
PACE 143
PANASONIC 142 060 160
PANSAT 121 172
PERSONAL CABLE 117
PHILIPS 071 152 153 068 154 156 201
PL 023 026
PRESIDENT 019 102
PRIMESTAR 110 030
PROSAT 072
PROSCAN 151 106 150
RADIOSHACK 148
RCA 151 106 150
REALISTIC 043 074
SAB 195 196 197 198 199 200
SAMSUNG 155 123 163 169 175 179
SATCRUISER 192
SATELLITE SERVICE 028 035 047 085
SKY 164 171 174
SONY 103 104
STARCAST 041
STAR CHOICE 148
SUPERGUIDE 020 124 125
TEECOM 023 026 075 087 088 090 107 130 137
TOSHIBA 002 127 157 158 068 154
TOWN & COUNTRY 023 026
UNIDEN 016 025 042 043 044 045 048 049 078 079 080 086 101 135 136
VIEWSTAR 115
VOOM 148
WINEGARD 128 146
ZENITH 081 082 083 084 091 120 159

CD PLAYERS and CHANGERS

ADCOM 062 042
AIWA 059 012 065 088 089 105 122 170 187
AKAI 085 195 202
AMC 231 232
AMEND 118
ARCAM 238 275
AUDIO ACCESS 119 147
AUDIO EASE 165
AUDIO TECHNICA 046
BSR 037 057
CALIFORNIAAUDIO 103 008
CAMBRIDGE AUDIO 268
CAPETRONIC 063
CARRERA 057 080
CARVER 185 041 044 050 086 107 130 134 135 138 139 203 204 167
CASIO 111 182
CARYAUDIO DESIGN 261 262
CLASSE 267
CLARINETTE 182
CREEK 159
CROWN 035
DENON 002 123 281
EMERSON 042 069 102
FISHER 050 185 134 008
FRABA 111
GENEXXA 010 069 102
GOLDSTAR 080
HAITAI 093
HARMAN KARDON 018 033 047 208 272
HITACHI 042 175
INKEL 130 143 144
INTEGRA 030 273
JCPENNEY 014 061 092 141
JENSEN 158
JVC 004 022 136 163 213 214 242 243 286
KENWOOD 185 007 023 055 071 072 142 137 254
KOSS 061
KRELL 241 279 285
KYOCERA 005
LOTTE 102
LUXMAN 011 028 070 076 249 252
LXI 059
MAGNAVOX 044 107
MARANTZ 027 041 044 051 077 107 209 246 274
MCINTOSH 212 247
MCS 014 073 092
MEMOREX 010
MISSION 044 107
MITSUBISHI 179
MITSUMI 153
MODULAIRE 182
MONDIAL 147
MUSICAL FIDELITY 258 284
MYRYAD 244 265
NAD 006 005 067 178
NAIM 271
NAKAMICHI 217 218 219 095
NEC 014 062
NIKKO 046
NSM 044 107
ONKYO 030 038 039 168 169 273
OPTIMUS 010 050 057 058 081 082 083 085 093 195
PANASONIC 103 201 172 008 068 248
PARASOUND 233 240
PHILIPS 041 044 107 246 253
PIONEER 010 020 025 056 174 175 176 257 263
PRIMARE 266
PROCEED 239
PROTON 044 107 228
QUAD 269
QUASAR 103 008
RADIO SHACK 182
RCA 017 042 150 276
REALISTIC 042 050 051 102 181 182 187
ROTEL 044 107 161 178 250
SAE 044 107
SANSUI 044 069 107 128 171 190 125
SANYO 050
SCOTT 069 102
SHARP 026 031 051 066
SHERWOOD 003 019 051 096 112 115 119 166
SIGNATURE 033
SIMAUDIO 280
SONY 048 081 097 126 133 177 225 226 164 229 230 259 260 277 278
SOUNDESIGN 251
SUGDEN 264
SUMO 155
SYLVANIA 044 107
SYMPHONIC 052 181
TAEKWANG 195 085
TANDY 010
TEAC 015 034 036 051 052 101 131 140 079
TECHNICS 060 103 200 172 184 008 068
TECHWOOD 076
THETADIGITAL 234 235 270
TOSHIBA 006 067 091 160 148
VECTOR RESEARCH 080
VICTOR 004 022 114 124
WARDS 185 033
YAMAHA 024 046 054 186 183 245 282 283 287
YORX 182

DIGITAL VIDEO RECORDERS (TiVo, Replay)

DIRECTV 117 121 122 123 124 125 126 127 128
HUGHES 117 121 122 123 124 125 126 127 128
HUMAX 118 121 122 123 124 125 126 127 128
PHILIPS 090 117 121 122 123 124 125 126 127 128
PIONEER 117 118 121 122 123 124 125 126 127 128
RCA 109
REPLAY TV 075
SONY 104 105 131
TIVO 090 117 118 121 122 123 124 125 126 127 128

LIGHTING SYSTEMS

COLORADO VNET 311 312 313 314 315 316 317 318
X-10 093 183 257
LITE TOUCH 208 212
LIGHTOLIER CONTROLS 307
LUTRON 077 158 159 306 308 309
RAKO 301 302 303 304 305
XANTECH 188 189

CUSTOM INSTALLATION PRODUCTS

3M 152
ADS TECH 404
AHANIX 260
AIWA 164
ALGOLITH 415
APPLE 401 412
ARCHER 155
AUDIO AUTHORITY 427 428
AURORA 300
AUTON 191
AURORAMULTIMEDIA 220
BEDIENUNGSANLEITUNG 221
BOSE 409
CALYPSO 491 492 493 494
CE LABS 298
CELADON 211
CRESTRON 213 214 215 216 217 218
DALITE 269
DDI 403
DELL 261 262 263 264 265 266 267 268
DLO 418
DMX 156
DRAPER SCREEN 204
DREAMVISION 097
DVDO 299 423
DWIN 080 253
ELAN 451 452 453 454 455 456 457 458
ELITE SCREENS 431 432
EVERQUEST 206
EXTRON 151
FARENHEIT 430
FAROUDJA 184 254
FUJI 209
GATEWAY 261 262 263 264 265 266 267 268
HAUPPAUGE 294 295
HP 252 261 262 263 264 265 266 267 268
HUNTER DOUGLAS 219
IOGEAR 407
IPORT 419
JERROLD 153
JVC 185 416
KALEIDESCAPE 259 459
KENSINGTON 406
KENMORE 251
KENWOOD 185
KEY DIGITAL 273 274 275
KEYSPAN 297
KLIPSCH 425
LG 296
LINKSYS 270
LUTRON 417
LUXOM 424
MAKITA 186 201
MICROSOFT 107 252 261 262 263 264 265 266 267 268 408
MINDPATH 205
NILES 160 187 272
NSM 161
NTI 421
PIANO DISC 085
PINNACLE 405
POLK AUDIO 162
PRIMARE 402
RCA 258
RUSSOUND 081
SCIENTIFIC ATLANTA 156 163
SIMA 082 429
SOLO ELECTRONICS 207
SOMFY 078 079 411
SONANCE 419
SONY 164 165 166 271 261 262 263 264 265 266 267 268 414
STARCOM 153
TEN TECHNOLOGY 401
TOSHIBA 261 262 263 264 265 266 267 268
TURBOSCAN 167
VELODYNE 203 413
WINBOOK 261 262 263 264 265 266 267 268
WURLITZER 410
XANTECH 168 169 170 171 172 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 420 426

MEDIA PC CONTROLS

AHANIX 260
DELL 261 262 263 264 265 266 267 268
GATEWAY 261 262 263 264 265 266 267 268
HAUPPAUGE 294 295
HP 252 261 262 263 264 265 266 267 268
KEYSPAN 297
MICROSOFT 252 261 262 263 264 265 266 267 268
SONY 261 262 263 264 265 266 267 268 271
TOSHIBA 261 262 263 264 265 266 267 268
WINBOOK 261 262 263 264 265 266 267 268

GAME SYSTEMS

MICROSOFT/XBOX 107 408
SONY 414

iPOD CONTROLS

APPLE/iPod 401 412
BOSE 409
DLO 418
IPORT 419
KENSINGTON 406
SONANCE 419
TEN TECHNOLOGY 401

INTERNET BROWSERS for TV

ECHOSTAR 106
MITSUBISHI 102
SONY 096
PHILIPS/MAGNAVOX 095

TAPE RECORDERS

AIWA 015 071 100 114
CARVER 006 008 027 024 036 137
DENON 105 227 229
FISHER 064
GOLDSTAR 011
HARMAN KARDON 233
JVC 106 116 239 240
KENWOOD 005 013 023 026 064 145 146 181 190
LINN 124
LUXMAN 035 137 139
MAGNAVOX 027
MARANTZ 014 027 056 065 087
MCINTOSH 238
MITSUBISHI 242 243
NAD 029 048
NAKAMICHI 244 245 025
ONKYO 002 012 016 017 018 019 115
OPTIMUS 026 054 055
PANASONIC 007 010 032 088 195
PHILIPS 027 087
PIONEER 003 039 047 050 066 098 222
QUASAR 007 088
SANSUI 027 113 119 224
SHARP 026 057 131 175 181
SHERWOOD 038 004 028 030 033 034
SONY 020 022 052 084 089
TEAC 009 059 212
TECHNICS 007 010 076 088 109 122 193
TOSHIBA 112
VICTOR 106
YAMAHA 021 026 031 067 040

These codes are used to operate your other equipment with the remote control.

See P-Pro on page 27, for details on how to enter these codes into the remote.

Specifications

Power Output

Front: **200 W + 200 W**
(8 ohms, 1 kHz, < 0.5 % THD)

Center: **200 W**
(8 ohms, 1 kHz, < 0.5 % THD)

Surround: **200 W + 200 W**
(8 ohms, 1 kHz, < 0.5 % THD)

Surround Back: **200 W + 200 W**
(8 ohms, 1 kHz, < 0.5 % THD)

Sensitivity
(for 150 W output): 355 mV

Protection
Thermal and short circuit

Minimum Impedance:
4 ohms average

Line-Level Outputs

Sensitivity
(for 0.5 V output): 125 mV

Frequency response:
20 Hz-20 kHz +/- 0.5 dB

Signal to Noise
(relative to 2V out):
Analog 97 dB
Digital 105 dB

Distortion (THD): < 0.03%

Separation (at 1 kHz): 70 dB

Tone Control:
Bass: +/- 14 dB
Treble: +/- 14 dB

Frequency Response:
All but subwoofer:
(Large): 20 Hz-20 kHz
Sub: 20-125 Hz
(crossover set to 125 Hz)
(The Sub plays the bass from the other channels using Bass Management)

Delay adjustment
All channels: 0-25 ms
(Delay adjustment is automatic when the speaker distance is entered in feet)

Video Section

Video inputs/outputs: 1 Vp-p
75 ohms

Bandwidth
Component: 100 MHz, -1.5 dB
Composite: 6 MHz, -2 dB
S-video: 18 MHz, -1.5 dB

Sunfire Universal Video
Composite→S→Component and S→Component
(Transcoder/upconverter is fully automatic)

Television Broadcast Standard
US: NTSC only
Export: PAL-BGIH only

HDMI switcher max resolution:
1080p

FM Tuner Section

FM range: 87.5-108 MHz
0.2 MHz steps
(0.05 MHz for some export models)

Usable sensitivity (Mono):
1.6 uV (75 ohms)
15.2 dBf (75 kHz DEV, 30 dB)

50dB quieting sensitivity (Stereo):
31.6 uV (75 ohms)
41.2 dBf

Audio output frequency range:
30 Hz to 15 kHz,
+.5 dB, -3 dB

AM Tuner Section

AM range: 530-1710 kHz
10 kHz steps
(9 kHz for some export models)

Usable sensitivity: (30% mod., S/N 20 dB): 16 uV / (600 uV/m)

S/N (30% mod., 1 mV input): 48dB

Trigger Outputs

Trigger current less than 250mA total

RS-232

19200 baud simple ASCII control
(19200-8-N-1)

Infrared Inputs

Optically Isolated
Standard 1/8” mini jacks
Standard 12V signal level

Power Requirements

US Model TGR-401:
120 VAC 50-60 Hz: 200 W

European Model TGR-401-230:
230 VAC 50-60 Hz: 200 W

Dimensions

17” Wide x 5.75” High x 16.5” Deep

Net Weight

32 lb

Manufactured under license under U.S. Patent Numbers: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,226,616; 6,487,535; 7,003,467; 7,212,872 & other U.S. and worldwide patents issued & pending. DTS, DTS Digital Surround, ES, and Neo:6 are registered trademarks and the DTS logos, Symbol and DTS 96/24 are trademarks of DTS, Inc.

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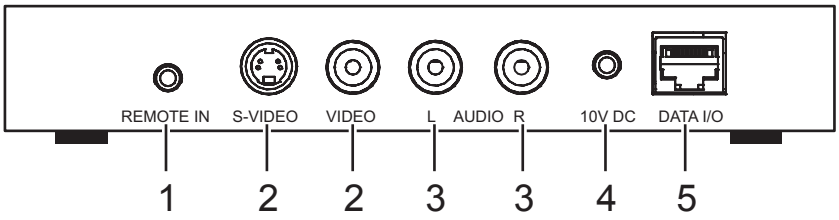
Manual part number:
913-141-00 Rev A2

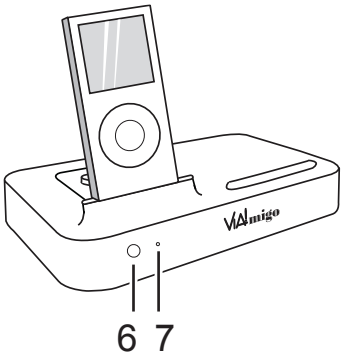
Default Input Table

This table shows the initial names of the different inputs of the TGR-401. If you change any of the names, or configure the different video or audio inputs, mark them in the blank rows provided in this table.

SOURCE	NAME	ANALOG	DIGITAL	COMPOSITE	S-VIDEO	COMPONENT	HDMI
1	HD/BD	1	COAX1	1	1	1	1
2	SAT	2	COAX2	2	2	2	2
3	DVR	3	COAX3	3	3	3	3
4	MP3	4	COAX4	4	4	N	N
5	DVD	1	OPT1	1	1	1	1
6	CABLE	2	OPT2	2	2	2	2
7	VCR	3	OPT3	3	3	3	3
8	CD	4	OPT4	4	4	N	N
9	HD/BD 7.1	8-CH	N	1	1	1	1
10	SIRIUS	(SIRIUS)	–	–	–	–	–
11	TUNER	(TUNER)	–	–	–	–	–
12	FRONT	(FP)	(FP)	(FP)	(FP)	–	–

Optional VIA!migo iPod Dock





1. Remote Input

This connection is not required for connecting to the TGR-401 (see #5 below). It allows you to send remote control commands from 3rd party controllers to the VIA!migo dock via the rear panel.

2. Video Outputs

Connect either of these outputs to a video input of the TGR-401. Composite video 4 and S-Video 4 are the default video inputs for MP3.

You will be able to see the menu system and "now playing" information from the iPod on your TV monitor, and see movies (in full color) if you are using a video iPod.

If you use the composite output, the video will be available to Zone 2 as well as the Main Zone. The TGR-401 will upconvert to component.

Even if you do not have a video iPod, you must make the video connection, or it will not be easy to navigate through your song lists and select songs.

3. L/R Audio Outputs

Connect these analog audio outputs to the analog L/R inputs of the TGR-401. You will be able to hear the audio output from your iPod.

Analog input 4 is the default input for MP3, and must be used for feedback if you are using the optioanl Olé-2SF touchpad.

4. DC Input

The supplied power supply connects here. Do not use any other power supply. The VIA!migo will charge the iPod.

5. Data I/O

This connector is used with standard Cat-5 Ethernet cable to join the VIA!migo to the VIA!migo connector on the TGR-401.

The connection allows iPod metadata (such as song title, artist name, and album) to pass to the TGR-401 for display on the front panel, on-screen, or in the optional Olé-2SF touchpads.

6. IR Receiver

This allows you to use the remote control to operate your iPod.

The remote should first be set to MP3, then it can be used to search through the iPod menus, select songs and play them (see next page).

7. Power LED

This will light when the VIA!migo is turned on. Use the remote control (in MP3 mode) to turn it on and off remotely.

Default settings

This OSD menu shows the default settings of the MP3 input, and is found in the Main Menu/Setup/Inputs menu.

	INPUT 4	CHOICES
ZONES	M/Z2	OFF, MAIN, ZONE 2, M/Z2
NAME	MP3	(UP TO 10 LETTER, NUMS AND SPECIAL CHARACTERS
GAIN TRIM	0.0 DB	-20 TO + 20 DB
ANA AUDIO	4	N, 1, 2, 3, 4, 8 CH (N = NO ASSIGN)
DIGITAL	COAX4	N, COAX 1-4, OPT 1-4
COMPOSITE	4	N, 1-4
S VIDEO	4	N, 1-4
COMPONENT VIDEO	N	N, 1-3
HDMI	N	N, 1-3
VIDEO DELAY	0 MS	0-180 MS IN 5 MS STEPS
AUTODET ANA	N	N/Y
AUTODET DIG AUD	N	N/Y
AUTODET CV	N	N/Y
AUTODET SV	N	N/Y
AUTODET COMPON	N	N/Y
2-CH ANALOG	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB, SRC DIRECT
2-CH DIGITAL	LAST	LAST, STEREO, MONO, PARTY, PLIIX MUSIC, PLIIX MOVIE, PLIIX GAME, PLIIX MATRIX, NEO:6 MUSIC, NEO:6 CINEMA, JAZZCLUB,
DOLBY	LAST	LAST, DIGITAL, DIGITAL EX, PLIIX MUSIC, PLIIX MOVIE
DTS	LAST	LAST, DIGITAL SURROUND, NEO:6, SUNFIRE
DTS96	LAST	LAST, DTS 96/24, NEO:6, SUNFIRE

This menu shows that if MP3 is selected as an input, the video is expected to come into input 4 (S-video or composite), and the audio into analog audio input 4. The audio is 2-channel analog, so the last 4 selections in this table for digital audio are not used in this application.

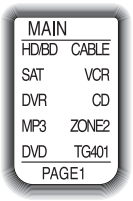
If the VIA!migo is connected to inputs other than 4, use this menu to select the inputs you are using.

Once the VIA!migo has been connected to the TGR-401, see the operation details on the next page.

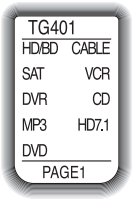
Using the VIA!migo

The following details show how to use the VIA!migo to play your iPod through the TGR-401

1. Press the remote's MAIN button to make sure its display is on main page 1.



2. Press the TG401 device button to set the remote to operate your TGR-401. The remote display changes to show the TGR-401 input selections.



3. Press MP3 to select the VIA!migo as the TGR-401 input. Your TV monitor (connected to the Mon Video output of the TGR-401) will show the VIA!migo menu. This appears in grey, and shows some familiar iPod menus and other options.

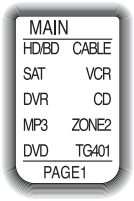
Menu Name	Choices
MUSIC	PLAYLISTS
	ARTIST
	ALBUMS
	SONGS
	GENRES
	COMPOSERS
	AUDIOBOOKS
	PODCASTS
PLAYLISTS	
MY JUKEBOX	
SHUFFLE SONGS	
NOW PLAYING	
SETTINGS	COLOR THEMES
	SCREENSAVERS
	SCREENSAVER TIME
	LANGUAGE
	ALBUM ART
	AUDIO SETTINGS

The Settings menu shows various options, such as different screensavers that can be applied, album art on or off, menu language etc. You cannot navigate through these menus or select choices until the remote is set to control the VIA!migo (see step 5 onwards).

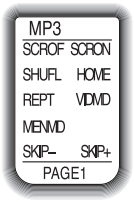
If you press INFO (just above the navigation buttons) the TGR-401 will show the Title, Artist, Album, and the surround mode. This will appear on the TV screen, as well as the front panel display.

4. To change surround modes, press INFO until the current mode is shown, then press the MODE buttons on either side of the navigation buttons until a suitable mode is found.

5. Press the remote's MAIN button to make sure its display is back on main page 1.

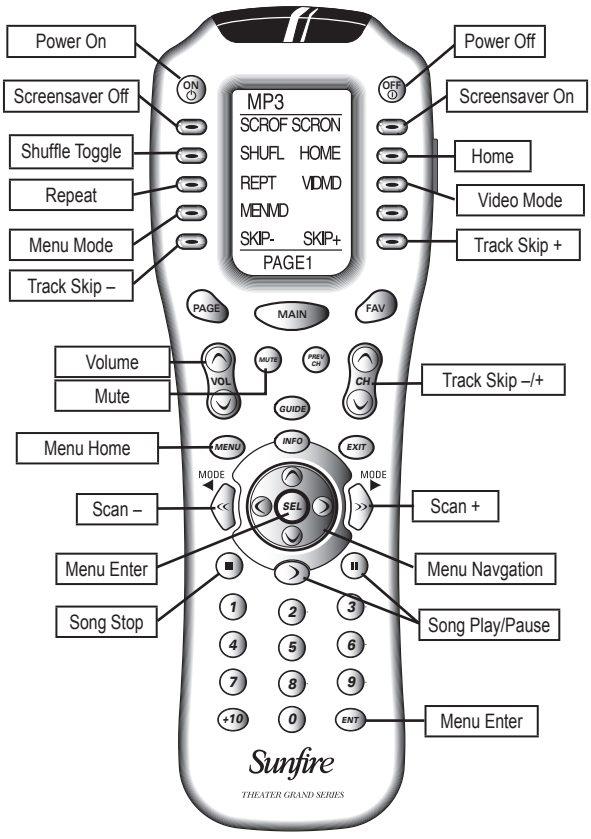


6. Press the MP3 device button to set the remote to operate your VIA!migo. The display changes to show the MP3 selections. In addition to the buttons around the display, other remote buttons are used to control the VIA!migo, as shown below.



7. If you have a video iPod, use the VIDMD button to select the video display. Select MENMD to select the menu display.

- The VOL buttons and MUTE button operate the TGR-401, even when the remote is in MP3 mode.
- The operation of the optional VIA!migo relies on the navigation buttons when the remote is set to operate the MP3. Therefore, it is best that you do not use the remote's PUNCH feature with the MP3, in case you program over useful buttons (see page 28).



Remote in MP3 mode

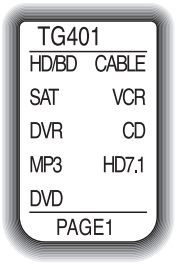
Optional SIRIUS Satellite Radio Tuner

The following details assume that the SIRIUS tuner is plugged in, powered up, and the antenna is hooked up and mounted outdoors. (An instruction manual comes with the tuner kit.)

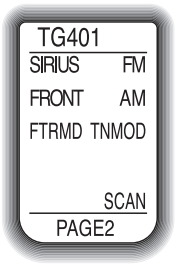
If you have not already done so, purchase a subscription plan from SIRIUS. Visit their website www.sirius.com for details.

1. Press the remote's MAIN button to make sure its display is on main page 1.

2. Press the TG401 device button to set the remote to operate your TGR-401. The display changes to show the TGR-401 input selections.

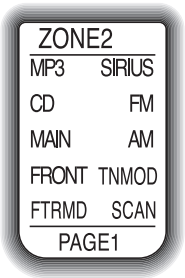


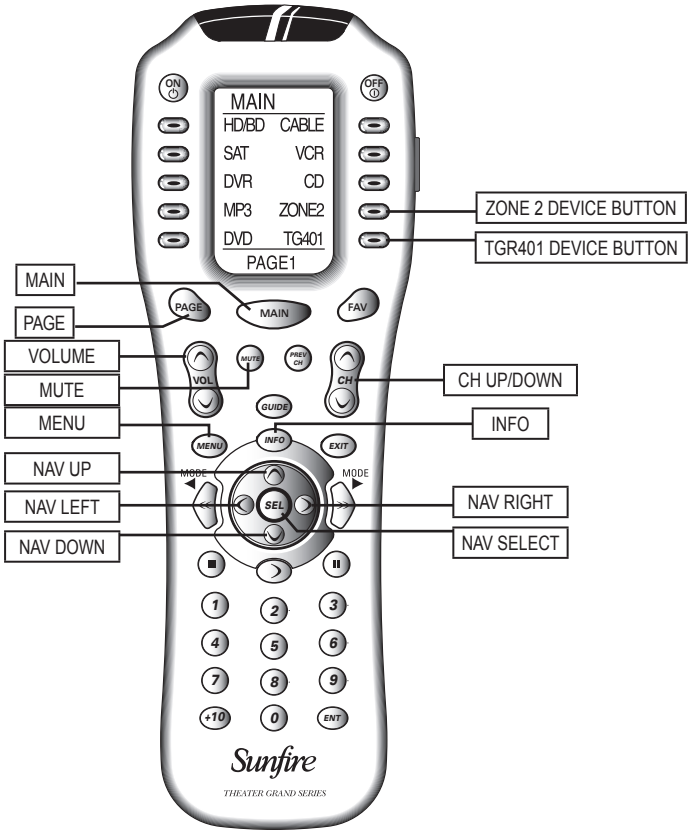
3. Press PAGE to reach page 2. This allows selection of the front panel input, the SIRIUS tuner, and the FM or AM tuner, FRTMD and TNMOD.



TNMOD allows you to toggle between using the number keys for direct channel access, or preset channel random access. TNMOD is also available for Zone 2.

4. To operate SIRIUS in Zone 2, first select the Zone 2 device button, then Zone 2's first page will show the SIRIUS input selector and TNMOD.





5. Various buttons (shown above) are also programmed to operate the SIRIUS tuner and the AM/FM tuner:

NAVIGATION KEYPAD - multifunctional for setup menu navigation, SIRIUS tuning and AM/FM tuning.

NAV UP - Tunes up one channel.

NAV DOWN - Tunes down one channel.

NAV LEFT - Selects previous category.

NAV RIGHT - Selects next category.

NAV SELECT - Toggles between category tuning and channel tuning.

INFO - Cycles through channel, category, artist, song title, composer, and listening mode.

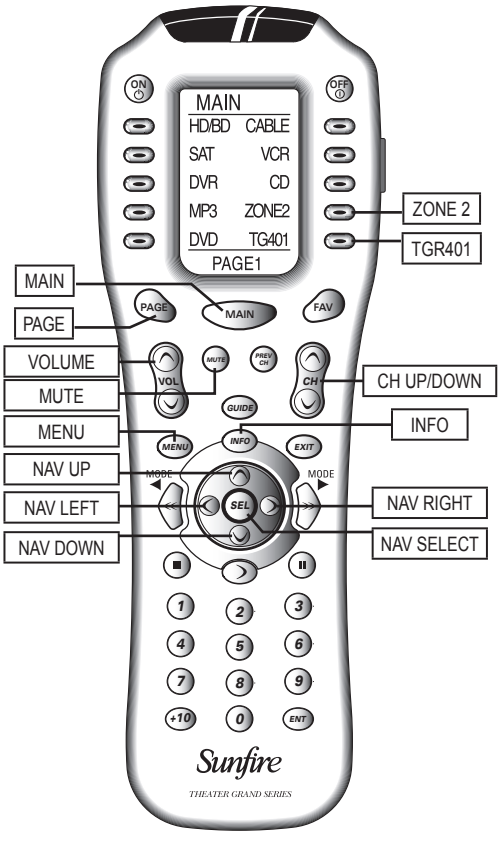
MENU - Enters setup menu where SIRIUS Presets can be configured or Skipped. Lock can be RESET.

CH UP/DOWN - Tunes up and down through preset list, skipping all presets set to channel zero.

VOLUME and MUTE- Adjusts the TGR-401 volume up and down, or mutes it.

6. See the next pages for information regarding the activation and general use of the SIRIUS Satellite Radio Tuner.

SIRIUS Tuner Operating Instructions



Activation:

1. Select the SIRIUS Input using the front input button and rotating the manual selector knob, or with the remote control.
2. You will need your SIRIUS Satellite Radio ID which you can get by tuning to Channel 0. The first time you power up your TGR-401 with a SIRIUS tuner, it will tune to channel 184 within 15 seconds. Press 000 on the remote control num keypad. The tuner will now go to channel 0 and display CH> SiriusID. Press the INFO key to cycle through Category (CAT), Artist (ART) and Song Title (TTL). After TTL>, will be your SIRIUS Satellite Radio 12-digit ID number. Write this down. It is also located on the underside of your SIRIUS tuner module on a sticker in a text chain starting with SID: XXXXXXXXXXXX. If you keep pressing the INFO button you will get Composer (CMP>) and the playmode (Stereo by default).
3. Press Tune Up (NAV UP) to go to channel 184. This is a weather channel and also a subscription activation channel. Call SIRIUS using the number on the SIRIUS insert card that came with your TGR-401 unit. Once you sign up, they will activate your tuner within a short time. You must leave the TGR-401 turned on and the SIRIUS tuner set to channel 184 until activated.

Setting presets:

1. Presets may only be configured using the Setup Menu. Press MENU to enter Setup, then navigate to PRESETS/SIRIUS. A list of 1-40 will appear with zeros after them. At the bottom is NEXT... to take you to the next sequence of preset channel numbers. Navigate down to CH 1 and use NAV RIGHT to increment to the channel you want for preset number 1. Refer to the channel guide that came with the tuner kit to pick your presets, or listen to assorted channels first while writing down a list of channels you would like to put in to your presets.
2. Continue using NAV DOWN to go to the next successive preset and NAV RIGHT to set the channel. When you are finished, exit the setup menu using the front panel Input button. You do not have to fill up all your presets. Any presets set to none will be skipped.

Resetting channel skipping and channel locking:

The TGR-401 does not support these features. However, should the tuner exhibit odd behavior regarding channel tuning, it may need to have the channel skipping and channel locking memories cleared. To do this, enter Setup menu using the MENU key on the remote. Navigate to SETUP/CONTROL and go down the menu to SIRIUS RESET. Press NAV RIGHT to force a reset.

General tuning and use:

Tune UP/DOWN to any channel by being in Channel Mode and pressing NAV UP or NAV DOWN. Pressing NAV SEL toggles back and forth between Channel Mode and Category Mode, and will show which tuning mode you are in. Even if you are displaying Song title, the display will revert to Channel name while you are tuning for ease of navigation.

CHANNEL UP/DOWN buttons will tune any presets you have loaded with channels. If you only have the first four presets loaded, then pressing Channel Up after preset 4 will wrap back around to preset 1.

Category tuning is activated by pressing NAV SEL. Briefly, the second display line will say “Category Mode.” Now when you tune channel up/down, you will only step through the channels inside the category you are in (POP, NEWS, etc.) To change categories, use NAV LEFT or NAV RIGHT. Each press will step you to a new category. To rapidly preview the content of the channels in the current category, press and hold down the tune up or tune down keys. You will still hear the last tuned station playing but be able to see what is playing on the other channels, from the info on the display. Pausing for a couple seconds during tuning will then tune to the channel that you are visually previewing.

The num keys can be used in two ways: direct enter channel access, or direct enter preset access. The default when the TGR-401 is first powered on is direct enter channel access. On page 2 of the TG401 softkey menu on the remote (or page 1 of the Zone2 softkey remote menu) is a button label called TUNMD. Pressing this toggles back and forth between direct enter channel and direct enter preset modes. Press the button once and then try any of the num keys. If you get a SIRIUS-P_ _ on the top line of the display, then you are in Preset direct tune. Enter the two digits of your choice for the preset number that you want. For presets below 10, enter a zero for the first num key. Once two digits are entered, the tuner will tune to that preset and display the channel number on the top line and the channel description on the second line. For direct enter channel tuning, you will need to enter three digits, starting with 00, if the channel is below ten.

To see information about the currently tuned station, press the INFO key to cycle through Category (CAT>), Artist (ART>), Song Title (TTL>), Composer (CMP>) and the playmode (Stereo by default).

Troubleshooting:

If you are in a marginal signal area, with no terrestrial repeaters, or the antenna is blocked by trees or buildings, you may see the message “ACQUIRING” come up on the display with no sound playing. Below a certain signal strength threshold of usability, the tuner will try to re-acquire the satellite signal. If necessary, readjust the antenna or relocate it in a more optimum position.

If the antenna cable is not plugged in on one end or the other, you will get an error message “ANTENNA”. Power down the system and re-check all connections.

If you cannot tune any stations other than 0 or 184, or cannot get any channel info on your presets, then your SIRIUS tuner unit may not be powered up. Check to see that you have a green indicator light on the tuner unit. Not having an active subscription will also cause this.

If you see the message “SUB UPDATED”, then SIRIUS is updating your subscription to include or disclude channels.

If you see the message “CALL SIRIUS”, then you are currently tuned to a channel that was just deactivated by SIRIUS, due to channel lineup change, subscription is deactivated or changed, etc.

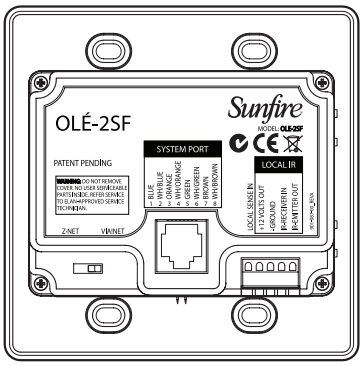
If you see the message “UPDATING”, then SIRIUS is performing an automatic firmware update to your SIRIUS tuner module (unrelated to TGR-401 firmware updates).

If you see the message “UPDATING 10%”, then you are 10% finished with having a firmware update from SIRIUS. The updates take less than a minute or two, typically.

Certain SIRIUS features are not supported with the Sunfire TGR-401, such as channel locking, channel skipping, JumpSet operation, traffic jump, storing songs, artists and games, SIRIUS Seek, SIRIUS Alerts, Virtual Categories, Game Alerts, and buffered operation with Play/Pause functions.

Optional Olé-2SF Touchpads

Front View (with bezel attached)



Rear View

The Olé™-2SF Film Interactive Touchpad (FIT) is a revolutionary in-wall controller for your TGR-401. Using a photographic film overlay instead of hard buttons, it marries the beauty of a touchscreen with the simplicity of a keypad –seamlessly controlling all major functions of your home theater or secondary room.

The Olé-2SF is configured out of the box to control the Zone 2 output. Custom-programming by your authorized Sunfire dealer will allow reconfiguring of the Olé-2SF to control the main theater system and a variety of functions required for your specific system.

The backlit film transparency provides system control icons and functions, while a multi-line 2" color OLED displays multiple pages of source control and feedback.

Multiple IR commands, or 'Sequences', can be issued from a single press of any button. Programming is accomplished with Sunfire's SunTools™ setup software, and is done through a direct link from a computer to the mini-USB download port on the front of the Olé-2SF.

Each button location (or "hot spot") is assigned a command that controls sources such as A/V equipment, HVAC systems, drapes, shades, lighting systems, or even fireplaces!

If the VIA!migo iPod dock is present, the Olé-2SF will allow you to see the iPod menus and navigate through them to select your favorite songs.

Features

- Plug-and-play. Right out of the box, the Olé-2SF controls Zone 2
- Simple SunTools™ PC programming for customization
- Sunfire Optimized™ graphics and programming
- Full touchpad design, no hard buttons
- Two inch color OLED (Organic LED)
- Two-way feedback for artist/song data from SIRIUS satellite radio and VIA!migo™ iPod® cradle
- Automatic brightness-adjusting via light sensor
- Audible 'click' to indicate a button press (can be disabled in software)
- Built-in IR receiver for passing IR commands back to the main room
- Connectivity for Local IR Output and Remote IR Receiver
- Virtually unlimited IR command sequences issued from any button press
- System sense sequence capability
- Fits in a double-gang electrical box
- Stylish Euro bezel in optional colors
- Patent pending design

Sunfire Limited Warranty

Sunfire, a division of Elan Home Systems, LLC, is proud of its products which have been built with care using advanced technology and premium component parts. Your unit has been crafted to perform properly for many years. Sunfire offers the following Warranty to you, the owner of a new Sunfire product:

Sunfire warrants the TGR-401 to be free from defects in materials and workmanship for the period of TWO years from the date of purchase. If within the applicable warranty period above purchaser discovers such item was not as warranted above and promptly notifies Sunfire in writing, Sunfire shall repair or replace the items at the company's option.

This warranty shall not apply:

(a) to equipment not manufactured by Sunfire.

(b) to equipment which shall have been installed by other than an authorized Sunfire installer.

(c) to installed equipment which is not installed to Sunfire's specifications.

(d) to equipment which shall have been repaired or altered by others than Sunfire.

(e) to equipment which shall have been subjected to negligence, accident, or damage by circumstances beyond Sunfire's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or any other catastrophic events beyond Sunfire's control, or to improper operation, maintenance or storage, or to other than normal use of service.

With respect to equipment sold by, but not manufactured by Sunfire, the warranty obligations of Sunfire shall in all respects conform and be limited to the warranty actually extended to Sunfire by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation, or other expenses which may be incurred in connection with repair or replacement.

Except as may be expressly provided and authorized in writing by Sunfire, Sunfire shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by Sunfire or services rendered by Sunfire.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

ATTENTION: TO OUR VALUED CONSUMERS

To insure that consumers obtain quality pre-sale and after-sale support and service, Sunfire products are sold exclusively through authorized dealers. Sunfire products are not sold online. The warranties on Sunfire products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer. To determine if your Sunfire re-seller is authorized, please call Sunfire at (859) 514-8290.

We suggest that you read the Limited Warranty completely to fully understand your Warranty/Service coverage.

Service Assistance

If your Sunfire product ever requires service, write to us or call:

Sunfire,
1300 E New Circle Road, Suite 150
Lexington, KY 40505
Phone 859-514-8290
Fax: 859-269-7972

You will be directed to an authorized Sunfire Service Station or receive instructions to ship the unit to the factory. Please save the original shipping carton and packing materials in case shipping is required. Please do not ship Parcel Post.

NOTE: Before sending in your unit for repair, you must call Sunfire for return authorization.

Include a complete description of the problem, indicating how you have it connected, the associated equipment in your system and a copy of your purchase receipt. Initial shipping costs are not paid by Sunfire; return ground shipping costs will be prepaid if repairs were covered by the scope of this Warranty.

EC Declaration of Conformity

According to EN 45014
Manufacturer's name:
Sunfire
Manufacturer's address:
1300 E New Circle Road, Suite 150,
Lexington, KY 40505 USA
Declares that the products listed on this declaration

Product name(s): **Theater Grand Receiver**
Product Model Number(s): **TGR-401-230**

Conform to the following product specifications:

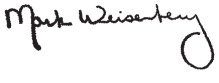
Safety:	EN 60065:2002 + A1:2006 IEC 60065:2001 + A1:2005
EMC	EN 55013:2001 + A1:2003 EN 55020:2002 + A1:2003 + A2:2005 EN 61000-3-2:2000 + A2:2005 EN 61000-3-3:1995 + A1:2001

The product herewith complies with the provisions of the following European Directives and carries the CE mark accordingly:

Low voltage directive 2006/95/EC
Electromagnetic Compatibility Directive 2004/108/EC

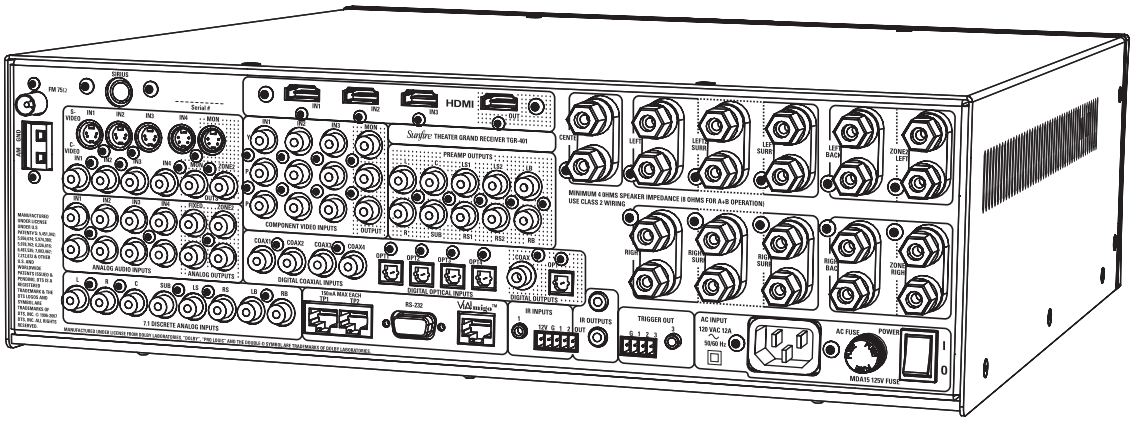
Supplementary information:
The product was tested in a typical configuration

Signed:



Mark Weisenberg,
General Manager, Sunfire

Sunfire®



Theater Grand Receiver
TGR-401
TGR-401-230

Sunfire
1300 E New Circle Road *Phone: 859-514-8290*
Suite 150, *Fax: 859-269-7972*
Lexington, KY 40505 *www.sunfire.com*

Manual part number:
913-141-00 Rev A2